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The United States MILLER

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THE STEVENS ROLLER MILLS

Remove all Germs without Breaking or Crushing them, and Hull the Black Cockle and Remove the Hulls, Clean Bran thoroughly, and make a Higher Grade of Flour than any other Mill known.

OVER 2000 PAIRS NOW IN USE!

Having Secured the BEST BELT MOVEMENT ever offered

We are prepared to furnish mills to be run entirely by belt, obtaining the nearest approach to a Positive Motion Without Gears.
We also manufacture the

Celebrated Cosgrove Concentrated Mill

Which is the Most Compact and Convenient Arrangement of Break Rolls and Separators.

READ THE FOLLOWING LETTER FROM A WELL-KNOWN FIRM:

MESSRS. JOHN T. NOYE & SONS, Buffalo, New York—

Gentlemen: We take pleasure in addressing you in regard to the introduction of the "Cosgrove Roller System" in our Mills at Brooklyn. By removing four pairs of our Millstones and putting in their place the two sets of the Cosgrove System, purchased from you, we find that with our former bolting and purifying arrangements, we can turn out flour, all roller ground, in quality from 50 to 75 cents per barrel superior to that made from the same wheat by Millstones. We are now grinding no wheat with stones. In making the change, our Mill was shut down but 4½ days to make connections with Elevators, Conveyors, etc. We drive the Cosgrove Machines from the same shaft that we formerly drove the Millstones. The work of the change was done by our own Millwrights, everything being so favorably located. The advantages that we find are principally, viz.: Saving from ¼ to ½ power required to make the same amount of flour by stones; uniformity of work of the Rolls, and the ease with which they are managed, one man being fully able to give proper attention to two or more sets if we had them; the separations made by the cylinders are perfect; any miller can quickly adjust them exactly to suit the wheat he wishes to grind and the work required; the capacity of our machines we find fully 50 per cent. above the amount you guaranteed (200 barrels). In conclusion, we will say, that the result generally of the system is entirely satisfactory to us for the best of reasons, our customers are thoroughly pleased and satisfied with our flour.

Yours truly,

BROOKLYN, NEW YORK, February 20, 1882.

F. E. SMITH & CO.

Among Recent Orders We Name the Following from Prominent Millers:

Lexington Mill Co., Lexington, O., 12 pairs,	E. O. Stanard & Co., St. Louis, Mo., 28 pairs,	E. T. Archibald & Co., Dundas, Minn., 12 pairs,
Pollock & Co., Vincennes, Ind., 12 pairs,	Penfield, Lyon & Co., Oswego, N. Y., 2 Cosgroves.,	Crocker, Fisk & Co., Minneapolis, Minn., 54 pairs.
James Norris, St. Catherines, Ont., 28 pairs,	McNeil & Baldwin, Akron, O., Cosgrove and 10 pairs.	

Jno. T. Noye Manufacturing Company, Buffalo, N. Y.

[Please mention the United States Miller when you write to us.] E. W. PRIDE, Agent, Neenah, Wis.

ODELL'S ROLLER MILL.

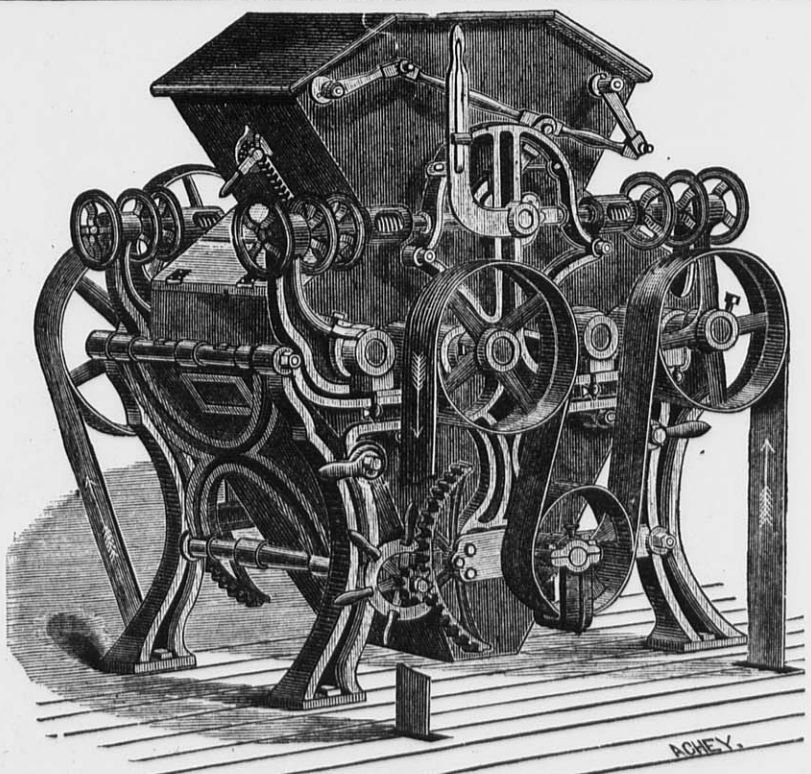
An Established Success.

We invite particular attention to the following

POINTS OF SUPERIORITY,

possessed by the Odell Roller Mill over all competitors, all of which are covered by Letters Patent, and cannot be used on any other machine.

1. It is driven entirely with belts, which are so arranged as to be equivalent to giving each of the four rolls a separate driving belt from the power-shaft, thus obtaining a **positive differential motion**, which can not be had with short belts.
2. It is the only Roller Mill in market which can be **instantly stopped without throwing off the driving belt**, or that has adequate tightener devices for taking up the stretch of the driving-belts.



3. It is the only Roller Mill in which **one movement of a hand-lever spreads the rolls apart and shuts off the feed at the same time**. The reverse movement of this lever brings the rolls back again exactly into working position and **at the same time turns on the feed**.

4. It is the only Roller Mill in which the movable roll-bearings may be adjusted to and from the stationary roll-bearings **without disturbing the tension-spring**.

5. Our corrugation is a decided advance over all others. It produces a more even granulation, **more middlings of uniform shape and size**, and cleans the bran better.

WE USE NONE BUT THE BEST

Ansonia Rolls!

References and letters of introduction to parties using Odell Rolls will be furnished on application, to all who desire to investigate the actual work of these splendid machines. Circular and Prices on Application to Sole Manufacturer,

STILWELL & BIERCE MANUFACTURING CO.,

DAYTON, OHIO, U. S. A.

[Mention this Paper when you write to us.]

Facts Worth Remembering

Millers who desire to avoid troublesome litigation, will do well to remember the following facts:

That **Gray's Patent Noiseless Roller Mill**, of which we are the sole manufacturers, was **the First Positive Drive Belted Roller Mill** invented and placed upon the market in this country or Europe.

That the construction of these Celebrated Roller Mills is **Fully Covered by the Foundation Patents** issued to W. D. Gray, and of which we have sole control. These patents are Nos. 222,895; 228,525; 235,761; 238,677; 251,217; dated December 23d, 1879; June 8th, 1880; December 21st, 1880; March 8th, 1881; December 20th, 1881. From the dates it will be seen that these patents **are the earliest** ones issued for improvements in Roller Mills, and a careful investigation will convince any miller that **they cover every feature of value** in a belted Roller Mill.

That several belted Roller Mills lately put upon the market by other manufacturers are simply imitations of **Gray's Patent Noiseless Roller Mills**, imitations in every way inferior to the original, in merit and design, and **Palpable Infringements** of our patents.

That we are fully **determined to Protect our Rights**, and have taken action to begin suits against infringers. While we regret the necessity of this step, it has been forced upon us by the unscrupulous conduct of other manufacturers.

We are thus explicit, in order that millers may have fair warning, and that they need not, by **Purchasing Infringing Machines**, involve themselves in **Troublesome and Expensive Litigation**, which must eventually result adversely to them. We have no disposition to deal harshly or unjustly, and only ask for a fair and candid investigation of our claims. Millers who are using Roller Mills which infringe our patents and who wish to avoid trouble by settling with us before incurring the expense of a suit, will be liberally dealt with, as it is not our design to oppress millers, but rather to force infringers to respect our rights.

Gray's Patent Noiseless Roller Mills

Are fully protected by foundation patents; they infringe no other patents, and they are the **Best** and **Most Successful** Roller Mills in the market, there being more of them in use than all other makes together. **Millers Run no Risk** in buying these Machines, and in purchasing of us will get the **Best Machine**, without any expensive accompaniments in the shape of suits for infringements.

EDW. P. ALLIS & CO.,

Sole Manufacturers of Gray's Patent Noiseless Roller Mills,

MILWAUKEE, WIS.

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Decortication.

Decortication of wheat is the act of stripping off the covering of the wheat berry. Many inventors have striven to invent a machine which would effectually accomplish this, but heretofore they have not succeeded in doing so. The most recent invention for decortication grain has been made and just been patented by Wilson Ager, of Washington, D. C. In reference to it, a late issue of the *Minneapolis Tribune* says:

"A series of important experiments in wheat cleaning processes, has during the past few months, engaged the attention of millers, and now that the invention is practically and successfully completed, we are enabled to give the following facts. Wilson Ager of the Trades mill, has perfected an invention which promises to be in great demand among millers everywhere. It is a grain decortication apparatus, the process through which the grain passes completely removing the cuticle of the wheat berry, and enables the miller to realize a much higher percentage of high grade flour than hitherto. Mr. Ager claims that his process will secure to millers an additional profit of from \$90 to \$100 on every 100 barrels. The apparatus consists of a set of gray Derbyshire stone revolving on a hub, within a cylindrical case which revolves in an opposite direction. The grain is placed in the cylinder, and the stone blades revolving rapidly through the mass, between a row of steel teeth, remove both the germ and cuticle, which are carried away by a current of air, and subsequently mixed with the bran and shorts. The grain thus operated upon produces, after passing through the burrs, 90 per cent. of middlings, and when ground by rollers gives 92 per cent. Without this process of cleaning grain, the best results seldom exceed 60 per cent. by rollers, and about 45 by buhrs. When milled by either of the old processes, from 10 to 20 per cent. of the fancy grade is demanded for the purpose of mixing with the low grade, or break flour, amounting to about one-third of the product of the mill, in order to bring it up to the grade known as bakers' flour. This bakers' flour thus compounded sells at from \$1.50 to \$2.50 per barrel less than the fancy brand.

"By a recent experiment made in the Trades mill, the following result was obtained on a set of six breaks on the Gray roll; Weighing one pound of "chop" of the first break and whatever break flour and middlings so taken from said break is deducted from the second break, and so on to the third, fourth, fifth and sixth breaks. By pursuing the above course there is found 12 11-16 ounces of middlings, 2 1/2 ounces of break flour, one ounce of bran; loss by handling 1-16 of an ounce. This would show an average of about 90 per cent. of middlings and 10 per cent. of break flour of a superior quality sharp and white, worth \$2 more than ordinary break flour. It is safe to say that by this method of cleaning, about 85 per cent. of the best patent or fancy flour, 10 per cent. of first-class bakers' and 5 per cent. of low grade or "red dog," can be obtained either by the roller or burr system. The entire production of the fancy grade, or 85 per cent. of every 100 barrels grades in the market as first-class fancy flour, the 10 per cent. being equal to any straight grade on the market. The test mentioned above was made on wheat cleaned by Mr. Ager's process, and ground by both the roller and burr process of grinding. The bran produced is found superior to bran made without the cleaning process, being larger and broader than can be made by any other method, a result which has surprised millers, who have invariably contended that the bran would be pulverized so fine as to become mixed with the flour, thus lowering and injuring the grade.

"This invention is protected by three American patents on the mechanism, and one on the process. The invention is also patented in England, Canada, Austria, Hungary and Germany. The millers of this city and from all parts of the United States have been anxiously watching the progress of these experiments. The machine gives equal satisfaction with spring or winter wheat, and can be used on buckwheat, rye, or for pearling barley or rice.

The process will be immediately introduced in the leading mills of the country, and will return a handsome compensation for Mr. Ager's long years of patient experiment and study. Arrangements are being made to have the machinery manufactured in the state of New York, in Washington, D. C., and in Minneapolis.

"Mr. Ager has been engaged during the past forty years in the invention of machines for cleaning cereals. Some of his inventions have proved exceedingly remunerative. He spent seven years in Europe and other parts of the world giving instructions in the milling business. He secured the first patents issued in America for the manufacture of white buckwheat flour. It will be admitted that he is no tyro in the milling business, having taken out fifty-four patents in different parts of the world, and this last invention promises to eclipse all the others."

The Latest Statistics of Australasian Milling.

Now that science, in its many practical forms, is abridging time and space in a very real and significant manner, it behooves the chiefs and leaders of all important industries to be up and seeing what their competitors are doing, even when those competitors may be thousands of miles away. Ocean, like land transport, is being so cheapened and simplified that distance no longer yields that "natural protection," it formerly did but very often a complete knowledge of what is being done in distant places, in the way of certain productive matters, does become of great value and eminent service to those who are working on the same lines, and who cannot remain in ignorance of their rivals' movements without eventually suffering thence. At present it is needless to say that the American is the great rival of the British miller, but it may be as well to remember that even in Australia great and strenuous efforts are now making to substitute, as far as practicable, the export of flour for that of wheat, and especially is this so in Victoria and South Australia, to say nothing of New Zealand. In the present instance we shall confine ourselves chiefly to the great colony of Victoria, as we have just received the official governmental return of the milling statistics for that colony, some account of which will be certainly interesting and instructive to many of our readers. The flour mills, it appears then, numbered at the end of 1880 no less than 145, of which 136 were actuated by steam, and nine only by water. The estimated horse-power of these mills was 2,742, and the number of pairs of stones running, 454; employing 793 persons. As to the wheat operated upon, the quantity ground for the year in question was 7,281,053 bushels, producing 157,784 tons of flour. The quantity of other grain operated on is given at 742,126 bushels. Coming to the approximate value of the grain operated on, we find the flour and meal produced valued at £1,651,351, while the estimated value of the machinery and plant is put as high as £227,643; to this must be added the sum of £181,122 on account of buildings and improvements.

The mills are pretty fairly dispersed over the area of the colony; adopting the alphabetical order we find that Ararat had 2, Ballarat 4, Echuca 2, Heathcote 2, Melbourne 7, Stawell 2, St. Arnaud 3, Sandhurst 3, Talbot 2, Warragatta 3, Warrnambool 2. These are the mills of the cities and towns. Taking shires we find that Avoca has 3, Benalla 4, Chiltern 2, Dunmunkle 3, Dundas 2, Echuca 2, Glenlyon 2, Goulburn 2, Glenelg 4, Huntly 2, Kyneton 4, Korong 3, Maffra 2, Marong 2, Omeo 2, Oxley 2, Seymour 2, Shepparton 3, Swan Hill 3, St. Arnaud 3, Towring 2, Wimmera 3, Warranga 4, and Yarrowonga 2 mills. It is a curious fact that only one mill driven by wind seems to have ever existed in Victoria, and that disappeared in the year 1873.

Considering that these 145 flour mills grinding flour out to the value of something like a million of sterling belonged to the members of a community—vast, by the way, judged by Australian standards—numbering only 860,000 persons, it is evident that export considerations enter largely into the industrial calculations of Australian millers. They are doubtless the more encouraged to persevere in their endeavors to develop a considerable export trade from the fact that, owing to the late improvements in railway communications within the colony, carriage is now easy and cheap almost anywhere; and then again the Australian millers can secure an almost unlimited supply of wheat, some of which is, it must be confessed, of good quality. To give some idea how wheat culture has steadily advanced in Victoria we may mention that the quantity of wheat raised in bushels in 1839 was just 12,600. In the following year it increased to 50,420, and in 1845 had grown to 234,734. In another decade it had reached the sum of 1,148,011 bushels, and in 1862 it stood at 3,008,487. In 1877 it was returned at 7,018,257 and in the year under notice it appears at the great total for such a population of 9,727,369 bushels.

Although these statistics, so well arranged by Mr. Hayter, the Victoria Government statistic, do not give us the flour mills returns for the other members of the group, we have been enabled through other sources to ascertain that in New South Wales there were in 1880, no less than 150 flour mills of 2,659 horse-power, driving 347 pairs of stones, and of these 140 were driven by steam. In South Australia there were at the same period 88 steam flour mills having an aggregate of 2,036-horse power, and 304 pairs of stones, while in New Zealand there were no less than 102 flour mills. As a net result, we find that the grand total for the Australasian Colonies was at least 500 flour mills, while we learn on competent authority that not only were many of the existing mills being fully renovated and equipped on the latest plan of scientific milling, but new mills were being projected, and all reports unite in predicting that before long Australasian milling will take a very considerable step onward, and altogether lift the industry out of those proportions to which the word "Colonial" can be slightly applied.

In Australia proper, the millstone still continues to be the chief factor in the granulation of wheat, although in not a few mills rollers, both porcelain and chilled iron, are used in the softening of middlings and semolina into flour. In New Zealand there is at least one mill which works on the gradual reduction system by rollers. This class of mills will, no doubt, speedily find their way into the adjacent colonies.—*The Miller*, (London.)

Amending the Patent Laws.

Apropos of our remarks in our last issue on the effort made by the enemies of the existing patent laws of the country to so amend them as to emasculate them of every element of protection for the inventor, we have had the opportunity of hearing a verbal report from the committee appointed by the Franklin Institute to proceed to Washington and lay before the Senate Committee on Patents, the protest of the Institute against the proposed amendment. From this report, which contained many interesting points, it appears that the strongest opposition to the patent system emanates from two powerful organizations, known as the Western Railroad Association and the Millers' Association both of which avow their open hostility. When it is considered how much the business represented by these organizations has profited and benefited by the numberless patented inventions which they have intro-

duced from time to time, their attitude towards the inventors of the country is not one which speaks highly for their fairness or honesty of purpose.

Again, it was pointed out that there was a strong opposition to the patent system among the farmers of the West, among whom the foreign element is largely represented. These men have somehow become possessed of the notion that the patent system operates to their detriment, and many of them, through ignorance, are opposed to the system of patents in any form. The folly and inconsistency of such stupid prejudice were forcibly shown in the report, when the spokesman of the committee remarked that no class of our population owed so much of their prosperity to, or were so completely dependent upon, the patent system of the country as these very farmers of the West, who, without, the aid of the numberless patented inventions in agricultural machinery, and in devices and machinery for facilitating and cheapening transportation, could neither sow their seed, reap their crops, nor send their grain to market.

Another member of the committee made the announcement that the strength of the opposition to the patent system in Congress was greatly underestimated. He affirmed that the large vote by which the recent obnoxious and destructive amendment had passed the House of Representatives, was not, as many have charitably supposed, cast hastily and without due understanding of its crushing effects upon the inventor class, but expressed the deliberate convictions of most of those who voted in its favor. He added to this that he was satisfied, from personal knowledge gained by his intercourse with members of Congress, that it was only a fortunate accident that prevented this destructive measure from having been put through the Senate with perhaps as large a majority as it had commanded in the House. This accident was the fact that a majority of the Senate Committee on Patents happened, most fortunately, to be composed of members who were favorably disposed towards the existing patent system.

These statements are full of instruction and warning to the inventors of the country. The facts brought out by this committee show the existence of several powerful organizations, with abundance of money at their disposal, and prepared to use every means at their command to break down the protection which the patent laws give to the inventor; they show a widespread opposition among the farmer element, the last, it would be supposed, to be found in the ranks of the opposition; and, most dangerous of all, they show that the sentiment of Congress is against them.

The strength of this opposition is so formidable, that it would be a grave error to ignore or undervalue it. Though defeated by a fortunate chance at this session of Congress, the enemies of the patent system will make a fresh onslaught at the next session, and it behooves the inventors and manufacturers who are jointly interested in the maintenance of the patent system of the country to see to it that their imperilled interests shall be boldly and strongly defended.—*Manufacturer and Builder*, (N. Y.)

STOUT, MILLS & TEMPLE, Dayton, O., employ 200 hands, and make the American turbine. Their corrugated and smooth chilled rolls, of which they are the patentees, are regarded as unexcelled in desirable qualities. Trade continues satisfactory.

THERE are in Ireland, according to official estimate 4,500,000 acres of waste mountain and bog, of which only about 1,000,000 are worth reclaiming, and these nearly all bog so situated that the water could be easily and naturally drained from them.

UNITED STATES MILLER.

PUBLISHED MONTHLY.

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MILWAUKEE, AUGUST, 1882.

THE MILWAUKEE DUST COLLECTOR COMPANY have received a great number of orders for their machine during the past month and the works will soon be crowded to their utmost capacity.

HON. J. B. A. KERN, owner of the Eagle Mills, Milwaukee, is the largest individual flour mill owner in the world. He is now making some very large additions to his already great mill here, of which we will give a description in a future number, when the work shall have been completed.

The *Miller's Review*, of Philadelphia, Pa., the latest venture in the field of milling journalism, has just issued its sixth number and it must be confessed a very handsome paper, and is ably conducted. The subscription price is one dollar per year. We cordially commend it to the milling fraternity.

The *Miller* (London), in its July number, prints an extended biography of the late ex-Gov. C. C. Washburn, with an excellent portrait. In opening its sketch *The Miller* says:

As a man, Mr. Washburn was fairly entitled to the term great, not perhaps, in the sense in which the term is used to designate those great deeds which figure most prominently in history, or those works of an intellectual stamp which live through all ages and give their authors an imperishable fame. Mr. Washburn is entitled to the term because he was endowed with gifts which not only enriched his life with rare achievements, but which, had the opportunities been forthcoming to bring them into greatest play, would have resulted in deeds which would have niched his memory among those of great historical characters.

A RAIL for common roads has been introduced in France. It is embedded in concrete and is flush at the edges with the roadway. From the sides it slopes down to the centre, so as to enable the wheels of vehicles to retain their place upon it. The estimated cost is about \$2 a yard.

We think it would be well for this country if our inventors would turn their efforts and genius to the subject of improving the wagon roads of the country. The wear and tear on horses, harnesses and vehicles on many roads would soon pay for putting them in excellent order.

MR. GEORGE B. DIXWELL, of Boston, Mass., is the author of three of the ablest tariff documents ever written—"Premises of Free Trade Examined," "Review of Bastiat," "The Review of Hrofessor Perry" and "The Farmer Question." These pamphlets, which have been widely circulated by John W. Hinton, of the North-western Tariff Bureau, of Milwaukee, are clearly and comprehensively written, and admirably adapted to all students and readers on the tariff question.

Personal.

C. M. Palmer, Esq., the genial editor of *The Northwestern Miller*, made us a very agreeable visit during the closing days of the month. We were gratified to see that our friend was enjoying good health. He spoke loudly in praise of Minneapolis milling interests, but cheerfully admits that Milwaukee is not such a great ways behind.

The Barrel.

No single article of wooden ware is of more importance to the miller than the barrel. The invention of the barrel, made of strips of wood and rendered tight and strong by hoops, finds in history no notice of origin or inventor. Pliny attributes it to the Gauls of the Po, in Lombardy. There is, however, good reason to believe that the barrel was in use before the Gauls reached Italy, perhaps before their existence as a people. In one of the inscriptions copied by Wilkinson from Egyptian monuments may be seen two slaves emptying grain from a wooden-hooped vessel, while a scribe keeps tally and a sweeper stands by to sweep up the kernels. Close by a poor victim is undergoing the bastinado, for short measure or petty theft. The measure is barrel-shaped, precisely like the *kaye* of modern Egypt, and would apparently hold about a peck. The age of this inscription is not indicated. Such measures would seem to have been in use very early in Egypt, not for liquids, for which skins and earthen vessels were used. The arid climate would at first thought seem to make it unsuited to the use of hooped vessels.

Insurance.

The directors of the Wisconsin Millers' Mutual Insurance Company met at the Newhall House, Milwaukee, July 25, and adopted by-laws and discussed the prospects of the Association. Their charter requires that 10 per cent. cash of the amount of insurance taken by any miller shall be paid in for the expenses of the Company, and that notes shall be given for the balance running for five years. When a loss occurs assessments are made on the notes. It is learned from past experience that the cost of mutual insurance on mills is about one-half the cost of stock insurance, and the company expect to make a great saving. The following officers were elected:

President—E. W. Arndt, De Pere.
 Vice-President—J. S. Clement, Neenah.
 Treasurer—S. H. Seamans, Milwaukee.
 Secretary—John Schuette, Manitowoc.

The office of the Company will be at Manitowoc, Wis. The object of the Association is to insure flouring mills, and they are now ready to take risks, having about 100 applications on hand.

The Wisconsin Millers' Mutual Insurance Company start out in business under the most favorable auspices and there seems to be but little doubt but that it will be a success and will save millers a considerable amount in cash for insurance. Wisconsin millers should lose no time in writing to the Secretary, as above, for full information.

Notes on Water Power.

FROM JAMES EMERSON.

"Efficiency," "Useful Effect," or "Percentage," are terms used to denote the economy of a wheel in its use of water, or the number of gallons it will pump back into the pond for each one hundred gallons drawn therefrom to drive the wheel. There are wheels that for each one hundred gallons used will return but twenty-five, others will return fifty, while medium wheels return seventy-five, and a better class eighty to eighty-five; the very highest, under favorable circumstances, will return something over ninety per cent., and of course, other merits being equal, are by far the most desirable.

What is the real working head? The term "head," as used in connection with water power, means the difference in height from the surface of water in wheel-pit to the surface in penstock above, when the wheel is running.

A square inch of water means a stream exactly an inch square; its length depending upon the head from which it issues. For a head of four feet, it means a stream an inch square, 16.04 feet in length per second; for a head of a hundred feet, a stream an inch square, 80.35 feet in length per second. To turn this into cubic feet, multiply by 12, then divide by 1728.

Pressure of water on dams depends on the depth, and is the same whether the pond covers one foot or ten thousand acres.

Turbines of any make are not perceptibly affected by backwater, except through loss of head. I think a slight difference was found by a commission appointed by the French government to experiment with the Fourneyron wheels. I have in two or three cases, when long draft-tubes were used, thought the loss greater than should occur from the loss of head, but have had no chance to determine the matter by actual test.

Many builders insist that it is essential that a turbine should discharge under water; but it is doubtful for the same head whether it makes any difference, if the wheel is properly made, though it prevents trouble from ice, and generally extra head is gained by submerging the lower part of wheel.

If a draft tube for any considerable proportion of the head is used, its lower end should be submerged to such a depth as to render its immersion constant, otherwise when first starting up only the head above the level will be available until the discharge has exhausted the air from the tube; then when it does take hold, unless the gate of the wheel works very quick, the speed is wild for a short time. When there is backwater some length of time a short draft tube renders it convenient to get at the wheel in case it is necessary to do so; but in most cases I should prefer to have the lower part of a turbine stand in the tail water.

A turbine is no more a hydraulic motor than the harness of a horse is a horse motor. A turbine simply transmits the power of a motor, or the power evolved from falling

water. Consequently the power it may give out depends upon its efficiency, capacity, and the head under which it works. The same wheel may be placed where it may easily transmit a hundred horse-power, or be overloaded in attempting to transmit one.

Is there any turbine made that on a variable stream in efficiency can equal the overshot? Yes, plenty of them that will not only equal but far surpass the best overshot wheel ever constructed, at either whole or part gate, whether the supply of water is constant or variable.

New Patent Infringement Cases.

We have been favored with information which goes to show that the patent-right men have not yet done with the millers. It is reported that Messrs. Banning & Banning, lawyers, of Chicago, are about to commence suits against millers in Illinois, Wisconsin and Minnesota for infringement of a patent granted to Wm. A. King, April 3, 1877, for the use of magnets for cleaning wheat from metallic substances. The first claim is very broad and reads as follows: "In combination with a hopper, or other receptacle of a mill through which the material to be ground passes, a magnet, or magnets, or magnetic substances are arranged around or in the discharge."

The Secretary of the Millers' National Association, Mr. S. H. Seamans, of Milwaukee, upon receipt of this information, wrote to Messrs. Howes, Babcock & Ewell, of Silver Creek, N. Y., manufacturers of the best known magnetic separators, and asked them if their machines infringed upon anyone. Messrs. H. B. & E. obtained a lengthy review of magnetic separator patents and an opinion on the subject from an eminent firm well versed in patents.

They express the opinion unhesitatingly that the Magnetic Separators, manufactured by Messrs. Howes, Babcock & Ewell does not infringe. Further than this, this firm say that they will in any event protect their customers.

English patents for magnetic separators were granted in 1835, 1855 and 1857. Several similar patents have been granted in this country during the past twenty-five years, and have expired by limitation. We do not think that millers need to lay awake nights, worrying about this new patent case.

There also appears to be indications that a war about the roller mill patents will soon break out and will cause a deal of noise. It will probably be fought out principally between the various manufacturers. For some time we have seen notices in this and other milling papers warning millers to beware of buying infringing machines. These notices from different manufacturers are like the running fire of the "picket guard" before the battle begins. The jolly miller will be kept busy during the coming year, however, with the grinding of our enormous grain crop, and will soon await what seems to be a distant day of reckoning with composure.

Who Makes the Best Miller?

It matters little what character or amount of machinery be introduced into a mill, whether it be a new or an old one, if the brains or the training necessary to manage all the details of the programming of the mill be wanting; it matters little what amount of money be laid out, or what pains be taken that the machinery be adapted to the work required, or what kind of salaries be paid the miller and his assistants, or whether the owner runs his own mill. First of all, whoever directs the operations of the mill must know how to run a mill; next, he must know how to run that mill. Now, whether a man is likely to thoroughly master the trade by serving an apprenticeship in a large mill is a question that may often be answered in the negative. It is generally understood in the mercantile trade, that the youth who starts out in a small house usually makes the most successful merchant, the reason given being that in the smaller establishment he is obliged to take a hand at everything about the place, and thus, in a comparatively short space of time, becomes familiar with all the details of the business; while if placed in a larger concern, he would be put through a lengthy probation in the basement, where his time would all be given to one character of duties; after passing several years, perhaps, in making a very slow advance—and long before entering those departments requiring the most skill and judgment—he is sent out to seek trade in some particular line of goods. There are thus lines of goods which he has never had

an opportunity of handling, at least in such a way as to become their master.

The simile will possibly illustrate our meaning with regard to milling. Take a stoneman and put him at the spout, or *vice versa*, and he may find that he is in some degree a failure. Place him suddenly among the maze of seeming intricacies of a modern mill, and he will be very far from at home. Take the same individual, after a fair experience in a custom mill of modest proportions, and place him in charge of one of somewhat greater capacity, and his natural aptitude will soon show itself in a thorough conception of the duties of his new position. This naturally leads to the inference that the miller who has had the running of the smallest and most antique mill, may become the most expert and successful manager, when called upon to lay out and manage the arrangements for the latest and most complete character of milling. We will probably be borne out by the testimony of others, in our assertion that the old fashioned grist miller generally makes the most successful merchant-miller. As the owners of mills not infrequently leave the running arrangements entirely to some one else, that responsibility, from which thorough capability usually springs, falls upon the miller in charge, and he, in reality, becomes the generalissimo of all the forces about the establishment.

Recent Milling Patents.

MAY 30.

Grinding Mill—Geo. K. Smith, Freeport, Ills.
 Middlings Detacher—Chas. Brown, St. Louis, Mo.
 Mill Packer Register—Geo. L. Williams, Edwardsville, Ills.
 Roller Mill—Ira Westcott, Buffalo, N. Y., and Jos. S. Karns, Lima, O.

JUNE 6.

Dust Collector—Samuel L. Bean, Washington, D. C.
 Roller Grinding Mill—Samuel L. Bean, Washington, D. C.
 Millstone Dress—Edinboro Cyrus, Augusta, Ohio.
 Manufacture of Flour—John Hollinsworth, New York, N. Y.
 Bolting Reel—Monroe Ingraham, Dadeville, Mo.
 Machine for Cutting Spiral Grooves in Grinding Rolls—Edwin Reynolds, Milwaukee, Wis.

JUNE 13.

Process of Decorticating Grain—Wilson Ayer, Washington, D. C.
 Grain Reduction Machine—John M. Case, Columbus, O.
 Feed Regulator for Grinding Mills—Melvin B. Church, Grand Rapids, Mich.
 Grinding Mill—Melvin B. Church, Grand Rapids, Mich.
 Device for Tightening Bolting Cloth—Milford Harmon, Jackson, Mich.
 Grain Conveyor—Henry Harrison, Burlington, Iowa.
 Automatic Grain Sampler—Washington Hawes, Port Richmond, N. Y.
 Grain Dryer—Edward Thompson, Hokah, Minn.

JUNE 20.

Buckwheat Hulling and Separating Machine—Wm. A. Cowley, Stamford, N. Y.
 Roller Mill—Noah W. Holt, Buffalo, N. Y.
 Machine for Collecting Dust—Alvah H. Kirk, Minneapolis, Minn.
 Roller Mill (re-issue)—Udolpho H. Odell, Dayton, O.
 Grain Register—Wesley Stringer, Port Dover, Ontario, Canada.
 Middlings Purifier—Augustus Wolf, Allentown, Pa.

JUNE 27.

Grain Separator—Holman A. Barnard, J. B. Cornwall, Moline, Ills., and J. S. Leas, Rock Island, Ills.
 Dust Collector—Milford Harmon, Jackson, Mich.

JULY 4.

Friction Gearing for Roller Mills—Chas. B. Campbell, Buffalo, N. Y.
 Roller Grinding Mill—James Dawson, Clear Grit, Minn.
 Flour Dressing Machine—Wm. D. Gray, Milwaukee, Wis.
 Apparatus for Drying Grain—Nels. W. Hawkenson, Litchfield, Minn.
 Roller Mill—Udolpho H. Odell, Dayton, Ohio.

JULY 11.

Method of, and Apparatus for, Degerminating Wheat—Chas. L. Gratiot, St. Louis, Mo.
 Roller Mill—Noah W. Holt, Buffalo, N. Y.
 Dust Catcher for Mill Stones—George Kiefer, Stuttgart, Wurtemberg, Germany.
 Grain Cleaning and Assorting Machine—Wilhelm Kruger, Kalk near Cologne, Germany.
 Grinding Disk—William Lehman, Milwaukee, Wis.
 Wheat and Middlings Reducing Mill—James Pye—Minneapolis, Minn.

JULY 18.

Apparatus for Separating Cockle and Seeds from Wheat and other Grain—Ebenezer Winchester, Rochester, Minn.
 Dust Arrester—Chas. M. Hardenbergh, Minneapolis, Minn.
 Feeding Device for Grinding Mill—W. D. Gray, Milwaukee, Wis.

New Stive Room.

In the discussion on the report to the Home Secretary on the Macclesfield flour mill explosion, read at the meeting of the National Association of British and Irish Millers on the 13th of February, 1882, Mr. Stansfield referred to a stive room which was being erected by his firm for the dust which was blown from the stones and rollers in the mill.

Among the advantages claimed for this dust room are: 1. All the air must pass through cloth, canvas, or bunting. 2. An arrangement in which the largest area of canvas is placed in the least space. 3. An arrangement in which the wind in its course over the canvas travels downward, so that the dust dropping off the canvas is not driven up again by the incoming current of air. 4. The least possible amount of woodwork. 5. The least possible cost. 6. Simplicity.

The room is built some considerable distance from the mill, on the reservoir attached to the latter, and as the water could not be conveniently taken out, four pieces of an old boiler flue were each driven into the bottom of the reservoir and clayed round, the water being subsequently pumped out. Inside the caisson thus formed, 12 inches were excavated from the dam bottom for a solid foundation, and a bolt having been fixed vertically in the center of each of the tubes were filled up with Portland cement concrete, a plate being attached to the bottom. Across the top of the foundation pillars two thicknesses of 11 in. planks were placed, which were covered by 2 in. boards, which are held down by four large castings, secured by the bolts already mentioned. The joists of the room are made fast to these castings, to prevent the fabric from being blown over. The room is 6 feet square by 30 feet high at the sides. The frame work is substantial, but covered with boarding of only 1 in. thickness, and at the top of the building is the stive box, 6 feet square and 2 feet high. The air from the fan is discharged through a 20 in. pipe, upward in the stive box, through an opening. The bottom of the box is composed of lattice work, with openings 3 inches square and 5½ inch centers. In each of these openings is fixed a canvas or bunting pipe, having a circumference of 12 in. and 7½ yards long, these pipes hanging down into the room, and their lower ends are stopped by tying a loose knot on each. The large opening in the bottom of the stive box is useful as manhole, in order to get to fasten the pipes in the openings in the lattice work. The area of a pipe 12 in. in circumference and 7½ yards long, is 2½ square yards, which, multiplied by 160=400 superficial yards. Only 140 tubes are placed in the stive room, so as to leave an opening on two sides of the pipes, which is convenient for allowing a man to go once or twice a week and shake them a little before or after emptying them. For this purpose an open floor is fixed 8 or 9 feet below the bottom of the stive box, access to which is afforded by a ladder fastened inside the room. In cleaning out the pipes, the man generally shakes them at the top, then opens a few of them at the time and lets the dust out, either into a sack held under, or on to the floor below, the quantity which escapes during the operation being trifling.

The dust room, which receives the air from nine large middlings purifiers and several other machines, and is bolted against the edge of one of the mill buildings, is 7 feet 6 by 8 feet 6 inches inside measure, and 42 feet high. It contains 1,000 superficial feet of canvas, and at one time the stive from the millstones was blown into it. Since the explosion in the Messrs. Fitton's mill, however, Mr. Stansfield resolved to provide a special compartment for the latter; hence the erection of the independent stive room we have described above, and in which means have been provided for the filtration of a very large body of air at comparatively little cost.—*The Miller, (London).*

The Flour Mill of the Future.

Whether the roller system or disc system of wheat reduction will finally achieve supremacy matters little for the purpose of this article—gradual reduction as a process has demonstrated its value so palpably that a return to low or flat grinding need not be apprehended for years to come. There are hundreds of millers, who, during the past decade, have spared no effort or expense to keep in the van of improvement, while hundreds more have given up the efforts to do so, apparently convinced that improvements radical in their nature, would be forthcom-

ing, so long as millers could be found to adopt them.

Looking back over the years that are passed, one can now easily determine that it has been but a transitory era in the history of American milling. No valuable radical changes in systems of procedure are ever the result of a single step, but are brought about little by little, and when thoroughly established, one hardly realizes the devious paths trodden in the attempt to reach a better, more economical, or more profitable manner of reaching results. It is, perhaps, well that we do not realize how far off perfection may be, when we enter upon a system of improvement, as, in all probability, few would be willing to burden themselves with the anxiety and expense necessary to its attainment could they comprehend the magnitude of the undertaking, and as a consequence improvements would languish, if indeed attempts in that direction were not altogether abandoned.

Every step taken in the right direction, however, compensates the one taking it, in some measure, and there is a certain degree of satisfaction, to the progressive man, in the fact that his efforts have not been altogether fruitless. He is encouraged to go still further, and, so long as every step taken results in his favor, so long will he continue to improve. The men who have the nerve to inaugurate improvements, and by inaugurating we mean adopting, are entitled to gratitude for their enterprise, as the results of their efforts in this direction serve as guides for others in the trade. If an improvement is of value it is so demonstrated by them and its adoption by others can be safely undertaken, but, if valueless, others are saved the expense and annoyance of testing.

The past ten years have been, as we said, a transitional era in the history of American milling. Systems and methods of procedure have been adopted, tested and abandoned, until, within a short time, mechanical appliances appear to have reached such a degree of perfection as to almost warrant the belief that the day of radical changes has passed. A system of gradual reduction has come to be recognized as preferable to any other, and, while opinions as to the relative merits of mechanisms for the performance of the reductions differ, the system itself is admittedly correct.

The flour mill of the future will be a very much different establishment from that of ten years ago. We look to see it a clean, tidy establishment, performing its offices almost wholly automatically; relieved in a great measure of its forests of spouts and elevator legs; having a pure, wholesome atmosphere, almost wholly devoid of dust, and its bolting facilities of a perfect character, readily comprehended, easily adjusted, and reduced in space occupied very materially from the present style. Much has been accomplished in this direction during the past two years; much still remains to be accomplished, but not, we believe, in the direction of radical changes in systems or appliances. These we have in abundance, giving most excellent and satisfactory results, but there is still room for improvement in the application of them. Improvements and changes will, of course, be made in the machines that go to make up the equipment of the mill, but it is not unlikely these changes and improvements will be simply matters of detail. We believe the day of radical changes in processes and appliances has gone by.—*Milling World.*

Gradual Reduction Milling.

[From a paper read before the Farmers' Institute of Richland Co., Ohio, by Mr. C. A. Burrows, book-keeper for Hicks, Brown & Co., Mansfield, Ohio.]

Until forty years ago the method of milling was seemingly to grind the grain as quickly as possible, regardless of the chemical effect on the product by friction and heat; it was truly chopped, bolted and bagged on short notice, and within the memory of many besides the oldest inhabitant a large portion of the offal was scattered to the winds or dumped below the dam. A better acquaintance of scientific matters, and the observation of practical minds, called attention to the constituent elements of the wheat berry and with the discussions of Drs. Graham and Jackson, everybody is now well advised that the principal components of the wheat grain are gluten, starch, albumen and minerals of various character, according to conditions of soil and climate. Until these properties were generally known, the bolting process of milling seemed to have obtained special attention, the growing fashion being for fine white flour, regardless of any other condition,

until the microscope was necessary to determine the number of meshes per square inch in the silken bolting cloth in use, bread reform doctors to the contrary notwithstanding. The day is dawning, however. Twenty years ago emigration swarmed toward the Northwest, which seemed to invite the wheat raiser especially, by its long clear summer days and dry atmosphere, and its special adaptiveness of conditions for the growth of the hard spring wheats, requiring scarcely the period or proceeds of a four months' promissory note to put in seed, harvest, thresh and market a crop. Analytical chemists had declared that these hardy wheats contained a large percentage of that flesh and bone element known as gluten, but from some cause then unknown, but attributed to milling, the flour from spring wheat did not make as satisfactory a loaf of bread as was desired. Investigation discovered the same weakness in bread from winter wheat flour. Necessity once again began invention, and ten years ago the new Gradual Reduction process of milling was born, and that revolutionist, the Middlings Purifier, declared himself the autocrat of the milling world. A new era in food products is the result. The astounding revelation is made that for centuries, the horse, pig and cow have luxuriated on the best portion of the wheat berry, fattened with so-called white middlings, and man had eked out an existence on the dry water element, known as starch. Less than ten years ago there was not in the United States any other mode of reducing wheat grain to flour than the old familiar circulating burr-stone; to-day its epitaph is being written.

As the direct object of this writing is to induce farmers to cultivate the hard, flinty varieties of wheat, we beg leave to submit briefly the reason for so doing. As before noted, knowledge of the constituent properties of human food is now a matter not solely the property of the chemist; he has given it to children of public schools, and the demand is not from the miller, it is from the bread eater; he will be satisfied only with the best, and all there is of it in the wheat berry. The relatively very high price which strictly patent process flours of the past ten years have commanded, plainly indicates that merit will be appreciated. It may not be out of place to suggest that that flour is not manufactured in the ordinary use of the word. It is a creature of divine wisdom, pure and simple. Under the outer coatings of the berry, which have been termed bran, the infinitesimal granules of the various elements are found, requiring only more or less pressure or rubbing to disintegrate them, and in various formula under the hands of the baker, soon to be transformed into food. This superb article of flour cannot, in its purity, be obtained from soft wheat, nor wheat that contains an excessive proportion of starch, and though the wheat may be in proper condition, it has been found difficult to obtain satisfactory results in reducing with millstones. Indeed, the inevitable has transpired, the stone burr is buried, and the fittest wheat only will survive the ordeal of the roll and purifier.

To those who may have witnessed the operations of the roller mill, it will not be necessary to say that the term roll does not correctly convey the idea of the action of the wheat berry. It is not crushed or flattened out as might be supposed, but is passed several times, at intervals, between rolls which run at differential speeds, and break or rub apart the coalesced granules. In its first passage, the grain is broken into two, possibly three pieces, which are scalped or bolted through coarse wire cloth, removing the germ and impurities found in the crease of the berry, and again passed through another pair of rolls, broken again as coarsely as possible, again scalped, portions of the bran removed, and so on through as many as six or seven reductions or "breaks," technically so termed. At each break small quantities of flour are made, which is passed to the purifiers, the revolutionist above referred to, a valuable machine, in which are recognized the laws of pneumatics and gravitation, producing purified middlings by separating the grits from the break flour. These purified middlings, and plenty of them, are the game of this interesting chase. They are the glutinous elements so much desired; and now after passing through forty or more reductions and separations are finally finished on porcelain rolls or stones specially designed for that purpose. The product is complete. No more too much bran in the flour and too much flour in the bran; a perfect separation is secured, more and much better quality of flour is obtained, giving the miller a better margin for his investment, risk and labor, and

enabling him to offer relatively better prices for prime wheat than heretofore, and with greater assurance can warrant the flour to make good, light, nutritious bread.

Flour and Grain Trade Notes.

THE total value of exports of breadstuffs for the eleven months ending May 31, 1882, was \$167,653,532 against \$245,955,413 for the eleven months ending May 31, 1881, a falling off of \$77,301,781.

PREPARATIONS are making for the shipment of grain from California to Europe via New Orleans. Messrs. George Hart and John A. McNeil, of Stockton, Cal., have been here for some days examining terminal facilities and completing arrangements for through shipments, to begin as soon as the railroads can furnish the necessary transportation from the Pacific slope.

THE prospect of the wheat crop in California is exceedingly flattering. From July 1, 1879 to July 1, 1881—two crop years—California produced 93,000,000 bushels of wheat, for which some \$85,000,000 were realized, or nearly \$100 for each of its inhabitants—and the indications are that the crop of the present year will be the largest ever harvested in the state.

A San Francisco journal claims that, from present prospects, India this year will have as large a quantity as 69,000,000 bushels of wheat to spare for export. This would be nearly double what was sent to England last year, according to the Calcutta correspondent's statement, that quantity reduced from tons being 22,400,000 bushels of sixty pounds each.

THE experience of the Georgia farmers has been favorable to the "Bill Dallas" wheat, a variety which originated in Lincoln County, Georgia, many years ago, but not brought prominently to notice until within the last five years. It is a full, plump-grained, amber-colored wheat, tolerably early, with tall, stiff straw, and is very hardy to resist disease, especially rust. Seed may be had in season, of Mark W. Johnson & Co., of Atlanta, Ga.

THE *Age of Steel*, (St. Louis), draws a rather gloomy picture for its readers. In a recent number it says, whilst considering the influence of crops on business: "From present indications, therefore, it looks as if the demand for American wheat will be exceedingly small, compared with last year's demand, and if we cannot dispose of our surplus grain abroad the fact is patent that large harvests would be of little or no benefit—in fact, might be the very reverse of beneficial. Add to this the awful certainty that gold is flowing out of the country in a constantly increasing stream, and the situation is not a pleasant one to contemplate. The balance of trade is largely against us, and the outflow of gold, if continued for any considerable length of time, will leave us as poor as that famous bird called 'Job's turkey.'"

We do not think that our contemporary need as yet sound the note of alarm. If our crops are large our people can live more cheaply than heretofore which we think all will consider a blessing, especially that portion of the people who are bread consumers. True our gold is going out to a moderate extent, but an unknown quantity of gold is coming into the country in the pockets of thrifty immigrants which does not make its appearance in the statistical records. It has been estimated that the number of immigrants who would come to this country to make their homes during the year 1882 exceed 800,000. This addition beside the natural increase of our population, will make our home consumption greater than ever before.

If the cost of living had not increased so greatly of late, we should have heard little or nothing about strikes. We confidently look forward to an immense harvest, a fair foreign demand, remunerative prices to the producer, and altogether a year's business at the end of which we can say we have had much to be thankful for.

J. B. MILLER & Co., of Ashley, Delaware Co., O., have just started up again, having put in a full line Reduction Machines, Rolls, Purifiers, etc., furnished by the Case Mfg. Co., Columbus, O. They have only been running about three weeks, but are so pleased with the new system that they have settled for it in full. Mr. Miller says the women in the neighborhood are constantly dropping into their office with a loaf of bread from his new flour and complimenting him on it and make him feel good.

A. FREDENHAGEN, St. Charles, Ill., visited Milwaukee a few days since and left his order with E. P. Allis & Co. for two pairs of their porcelain rolls in Gray's Noiseless Frame, also one pair of their sharp corrugated rolls in Gray's Frame.

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E. HARRISON CAWKER, EDITOR.

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MILWAUKEE, AUGUST, 1882.

We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement was seen in the UNITED STATES MILLER. You will thereby oblige not only this paper, but the advertisers.

Flour Mill Directory.

CAWKER'S AMERICAN FLOUR MILL DIRECTORY for 1882, was completed, ready for delivery February 1, 1882.

It shows that there are in the United States 21,346 flour mills and in the Dominion of Canada 1,488. The mills in the United States are distributed as follows:

Alabama, 388; Arizona, 17; Arkansas, 234; California, 209; Colorado, 52; Connecticut, 399; Dakota, 44; Delaware, 96; District of Columbia, 7; Florida, 81; Georgia, 514; Idaho, 18; Illinois, 1258; Indiana, 1163; Indian Territory, 3; Iowa, 872; Kansas, 437; Kentucky, 642; Louisiana, 41; Maine, 220; Maryland, 349; Massachusetts, 363; Michigan, 831; Minnesota, 472; Mississippi, 297; Missouri, 942; Montana, 20; Nebraska, 205; Nevada, 10; New Hampshire, 202; New Jersey, 445; New Mexico, 28; New York, 1942; North Carolina, 556; Ohio, 1462; Oregon, 129; Pennsylvania, 2786; Rhode Island, 47; South Carolina, 205; Tennessee, 620; Texas, 548; Utah, 129; Vermont, 231; Virginia, 689; Washington Territory, 45; West Virginia, 404; Wisconsin, 780; Wyoming, 3; Total, 21,356.

The directory is printed from new Burgeois type on heavy tinted paper and is substantially bound. It makes a book of 200 large pages. The post offices are alphabetically arranged in each state, territory or province. The name of the mill, the kind of power used and the capacity of barrels of flour per day of 24 hours are given wherever obtained which is in thousands of instances. This work is indispensable to all business men desiring to reach the American Milling Trade.

Price Ten Dollars per copy on receipt of which it will be sent post paid to any address. Remit by registered letter, post-office money order or draft on Chicago or New York made payable to the order of E. Harrison Cawker, publisher of THE UNITED STATES MILLER, Milwaukee, Wis.

THE total value of the export of breadstuffs for the six months ending June 30, 1882, was \$64,833,581 against \$111,980,917 during the corresponding period in 1881.

An item has been going the rounds of the milling papers lately, announcing the immigration of one hundred millers from Hamburg, May 31. These immigrants we are informed were *silk* millers and not *flour* millers.

THE MILLERS' NATIONAL INSURANCE CO., of Chicago, in their report dated July 1, 1882 show, total assets \$685,024.53. They have no unpaid losses and no contested claims. The total amount of losses paid since organization aggregate \$160,402.14. Col. W. L. Barnum, of 143 La Salle St., Chicago, Ill., is the secretary of the company.

THE United States Senate has passed a bill appropriating money to pay for surveying the line of the proposed Hennepin canal. The people of Illinois will be called upon this fall to vote upon the question as to whether or not they will cede to the United States, the Illinois and Michigan canal. It is expected that this will be done; if not, it is not probable that the U. S. Government will undertake the enterprise.

THE business failures for the six months ended June 30th, as reported by the mercantile agency of R. G. Dun & Co., were 3,597, with liabilities of \$5,000,000. The failures for the first six months of 1881 were 2,862, with liabilities aggregating \$40,000,000. The increase for the first half of the present year is, therefore, in number and amount, about 25 per cent. as compared with the corresponding period of 1881.

WE have received from the publisher, Mr. Howard Lockwood, 74 Duane street, New York, a copy of "The Miller, Millwright and Millfurnisher," by Robert Grimshaw, C. E. This is a handsome work of about 550 pages, illustrated by 400 engravings. The work is a valuable compilation of almost everything pertaining to modern milling, and any mill-owner, millwright, or miller will find it of great use to him and should have it in his library. The book shows the results of much labor and research and is carefully indexed so as to make its information easily available to anyone. The price of the book is \$6.00 per copy, post paid to any address. We predict for the the book a handsome sale.

Mr. J. F. Graham, a veteran miller of Rockford, Ia., does not believe that rolls are better than stones for making flour, and in a recent letter to us, says:

"Is it not a lamentable thing to see millers all over the country throwing away their splendid millstones for those miserable roller mills and spending millions for an article that is nothing but a bill of expense, when the very stones they have thrown away can be made to outdo the roller mills or any other iron device that has ever been made. I can satisfy the most skeptical miller in a short time, if he will visit my mill, of the superiority of stones for milling, either for making middlings, cleaning bran, or any other necessary reduction required to make good flour economically."

WE have received from the United States Department of Agriculture a 100 page pamphlet entitled "Florida; its Climate, Soil, Productions and Agricultural Capabilities." This work is an excellent advertisement for Florida, and it seems to us as if it had ought to have been printed and paid for by that State. We understand that 864,000 copies of this pamphlet have been printed the cost of which could not possibly have been less than \$50,000. If Florida has the right to be advertised so enormously at the expense of the U. S. Government we see no reason why other states should not also have a feed out of the public advertising crib.

On the 15th of July, Mr. S. H. Seamans, Secretary of the Millers' National Association, published his report of the condition of crops, received in answer to 2,000 circular inquiries sent out to the millers and others in every section of the country. After giving his report in detail, Mr. Seamans concluded as follows:

A careful perusal of the foregoing will confirm the opinion that that the crop of 1882 will prove an exceptional one, in quantity and quality, in fact the outlook indicates the largest wheat crop ever raised in the United States. If the yield of 1881 is correctly estimated, on the basis of 488 millions, the crop of 1882 will exceed 500 millions, providing the spring wheat meets with no misfortune. Not only is the quantity immense, but the quality promises, or is equal to any crop of former years. We look to see our millers in position to make flour which will enable them to compete, both in quality and price, with any market in the world.

In answer to the question, "What is the amount in mills and warehouses in Wisconsin?" the circular says:

"Very little outside of Milwaukee; 700,000 in store in Milwaukee, held by 'Ring Gridders;' the quality of which is unsatisfactory to the millers, and can only be used to advantage for making choice flour by adding a large percentage of the hard varieties. Sample wheat selling in the Milwaukee market to-day at \$1.45 to \$1.50 per bushel. So long as the present rules of inspection remain, which allow the grade to be governed by the weight test admitting scoured wheat into No. 2 and higher grades, so long will our 'grade' wheat be inferior for milling."

The Suez Canal.

Should the Egyptian war be the cause of closing the Suez Canal the commerce between Europe and the Orient would be very seriously interfered with. It seems probable that but few shipments of wheat from India will be made if the war continues. If the canal is closed all commerce will have to be carried on via Cape Horn or via the Pacific steamers, railroad across the United States, and then again by steamer to Europe.

The Suez Canal was opened for traffic Nov. 17th, 1869. It cost about \$60,000,000 and is owned principally by British capitalists. It has caused a great increase in traffic between Europe and Oriental countries, and the British public has congratulated itself on being well supplied with cheap wheat from British India via the Suez Canal. We are loth to believe that Indian wheat will soon cut any very important figure in the European trade with the canal open and unobstructed. If Arabi Bey should blockade the canal now it will strike a blow to the Indian grain trade from which it will not soon recover.

Important to Millers and Grain Shippers—How to Send Samples of Flour or Grain to Europe.

To any seeking a European market where in many instances it is absolutely necessary to send samples, it may prove desirable to know that the most complete arrangements exist for the rapid transportation and delivery of such packages promptly and at very moderate prices, by Theo. Baldwin's European Express, 53 Broadway, New York. This express has agents in the principal points West, who will at once take charge of such packages and send them speedily to any point in Europe. Packages weighing from 2 lbs to 20 lbs are most desirable when quick delivery is important. The weight should not exceed 20 lbs, although much heavier are carried. Price of expressage would be from \$1.00 to \$3.50 from New York. Shippers will receive any information desired upon application to Wm. G. Taylor, P. O. Box, 354, Milwaukee; G. A. Carrington,

ton, No. 8 North 3d St., Minneapolis; John Peterson, Adams Express Co., Chicago; L. H. Abrams, Jr., Adams Express Co., St. Louis, H. B. Storr, Adams Express Co., Cincinnati; or at the Head Office in New York City. Heavy expense has been incurred to make this sample service (now a specialty) as effective as possible. Many thousands of such packages are forwarded annually and they are now delivered almost as rapidly as the mails, even at remote points.

Another Patent Suit.

We are reliably informed that a party who claims to have patented the use of magnets for removing metallic substances from coffee, spices and other substances has announced his intention of demanding royalties from users of magnetic grain separators and in case his demands are not submitted to will bring suit for infringement of patents against such users.

The Millers' National Association has already received notification of the patentees' intentions. His claims will be thoroughly examined and if not found to be justifiable, they will, as a matter of course, be resisted.

[For the United States Miller.]

Two Hungarian Opinions About American Flour.

Mr. Emerich Pekar, the eminent Hungarian milling expert, in his recent report to his government, said:

"The United States could not adopt our system, because there is no sale for the dark flours, represented by our numbers, 7, 8, 8½ and 8¾, for the rich and the poor alike are accustomed to a white bread, and the flour is intended to supply the requirements for white bread and not for pastry. This demand is satisfied by the production of three grades, as is now the case in Minneapolis, for example and in them, darker grades are sometimes mixed though not to any great extent. Another reason why middlings milling flourished there only to a certain degree, is the fact that the public, influenced by the quality of the wheat, have been accustomed to one straight grade of flour, and therefore this custom had to be taken into account, as of the greatest importance in producing this grade of flour by another system. From local reasons, it is consequently not to be supposed that the Americans will make as many grades of flour as we do, but, unfortunately, it is only a question of a very short time for their flour to equal ours in purity and excellence."

And now comes the *Ungarische Muehler Zeitung*, which, commenting on the above extract, says:

We beg leave to express a contrary opinion. We do not believe that the strength for which our flour is celebrated is to be found in any of the American brands. * * * Of twenty-six brands of American flour examined, two had no gluten at all and in two others was very deficient. Of thirteen Hungarian samples tested all were found to be glutinous to a high degree. Americans have not got the wheat to make a flour equal to Hungarian flour. We recently examined with great care, a sample of American "finest patent process" flour, sent to us from London. Under the microscope this flour appeared to be mixed with small, flattened particles of a yellowish color. Evidently this sample of flour was made from a mixture of American and Hungarian flour, the latter ground on smooth rolls. Upon doughing up and baking samples of this flour and of Hungarian flour No. 3 from the Ofen-Pest Mills, Budapest, the American sample was found to be greatly deficient in water absorbing qualities and did not rise as well.

Personal.

CLIFFORD F. HALL, editor of *The Grain Cleaner*, Moline, Ill., called during the past month.

GEO. T. SMITH, of world wide purifier fame, has been visiting Minneapolis during the past month.

MR. GEO. B. HECKEL, one of the Chicago representatives of the *Lockwood Press*, of New York, called on us while making a flying visit to Milwaukee.

Mr. Prinz, the inventor of the Prinz Dust Collector, called on us. He informs us that his machine is meeting with the most gratifying success.

Lindsay Atkinson, Esq., of Shell Rock, Neb., call on us July 28th. Mr. Atkinson will accept a position in the Daisy Roller Mill, of Milwaukee.

Herman F. Notbohm, Esq., of Janesville, Wis., called on us during the month. He has closed out his entire interest in milling property in Janesville and expresses his intention of going abroad for a year or more for the sake of pleasure and health.

July 22d we were favored with a call from Proctor Thomas, Esq., of 15 Trinity Square,

Tower Hill, London, Eng. Mr. Thomas is one of the most extensive flour buyers of Great Britain. He is now on a trip through this country partly for pleasure and partly for business.

W. C. Edgar, of the *Northwestern Miller*, made us a pleasant call on his way East to visit friends. The *N. W. Miller* is prospering and it is safe to say will continue to do so in the hands of such able gentleman as Messrs. Palmer and Edgar.

Mr. J. E. Mann, of the Geo. T. Smith Middlings Purifier Co., made us a brief visit. The calls upon his time from customers are so frequent that he is kept in motion about 'eight days in the week' so to say. He says he will try to satisfy all demands if the weather keeps cool.

John Kelner, Esq., head miller for C. L. Colman, at Winnebago City, Minn., paid us a brief call. He reports the milling business dull just now on account of scarcity of wheat. Mr. Kelner's host of Milwaukee friends are glad to see him again.

Mr. S. S. Chisholm, of the firm of Chisholm Bros. & Gunn, Chicago, Ill., and formerly one of the proprietors of *The American Miller*, was married June 22, to an American lady at St. Pancras, England. We wish him and his bride a long and happy life.

Robt. Williams, Esq., the handsome head miller of the Empire Mills, of Milwaukee, has just closed his engagement with that mill and is taking a brief vacation. He thinks some of moving away from Milwaukee but we hope he will change his mind and bide with us yet a while.

Mr. C. C. Rogerman, editor of the *Miller and Millwright*, of Cincinnati, O., called on us recently on his way to the Northwest. Bro. Rogerman recently entered into the holy bonds of matrimony with Miss Lizzie Schraer, daughter of Hon. George Schraer, of Cincinnati. We congratulate him on his good fortune and wish the young couple a life of happiness.

D. Narracong, Esq., of Reedsburg, Wis., called on us recently and showed us a handsome model of his recently invented water-wheel governor. This governor is simple in construction and costs but little to build and attach it. An alarm bell in connection with it gives warning immediately whenever there is a change of speed.

Foreign Items.

FIFTY Spanish bakers were recently arrested, tried and fined, in Madrid, for selling bread short in weight.

THE import duty on breadstuffs, in Morocco, has been reduced by the Sultan.

L. C. PORTER, of Winona, Minn., has arrived safely in London and is now enjoying himself in Paris.

It is said that out of a total of 2,000,000,000 acres of land in Australia fit for tillage but about 9,000,000 have been brought under it.

MILLING TRADE OF GERMANY.—At a meeting of millers at Erfurt, Mr. Wyngaert said there was a positive crisis in the milling trade of Germany. In spite of the protective duties many millers had failed, and the effective value of the mills was lower. In Westphalia, for example, a mill that was formerly let at £180 only brought £110 now; one purchased for £5,150 was sold for £2,510, and another was offered for £3,500, the bare cost of the building. These and similar cases were to be found in all Germany, particularly in the west. What was the cause of this? It could not be denied that the improved systems were to blame for it, for instead of their being used to improve the production, they were frequently only used to produce the largest quantity possible, resulting in overproduction. The credit system was another curse of the trade. They had brought things so far as to give a baker credit without knowing within what period they would get their money, and although many millers granted nominally only three months' credit, this term was often lengthened to retain the customer. He should like to know how many thousands of bakers there were who were carrying on other business with the millers' capital. He considered the system an evil one and urged them to follow the example of the Nuremberg millers, and restrict the credit to two months at the utmost, and abolishing forward sales. He remarked how easy it was for a baker to start in business. All he had to do was to rent a shop, get an oven built on credit, and the miller would at once furnish him with capital, i. e., with flour, congratulating himself on having secured a customer.

"BEST IN THE WORLD."

GARDEN CITY WHEAT BRUSH!



Gathmann's patent "inclined bristles" prevents all clogging when the brushes are run close together. This is the

ONLY DOUBLE BRUSH

Which can be set up close so that it will
Thoroughly Brush Wheat.

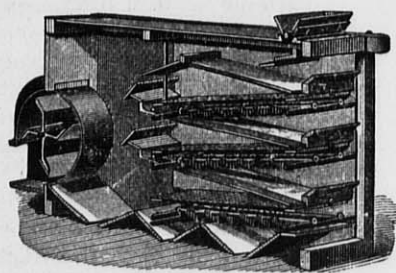
Guaranteed to **IMPROVE COLOR** of the FLOUR.

It don't break or scratch the grain. Removes all the dust. Very light running. Send for circular and prices.

Prices Reduced!

Improved Garden City

Middlings Purifier!



With Travelling Cloth Cleaners

Our improved Purifier has every device requisite to make it perfect, and every one in use is giving the greatest satisfaction to the users. The Cloth Cleaners are guaranteed to clean the cloth better than is done on any other purifier. Send for our new circular.

Over 4000 Garden City Purifiers in use, nearly 500 of which are the Improved Machine.

The **Best** and now the **Cheapest**. Write for circulars and price list.

We are agents for the

BODMER

Bolting Cloth!

Which has long been acknowledged as the best made, and which has lately been further improved, making it now *beyond competition*. We make it up in the best style at short notice. Send for prices and samples.

Garden City Mill Furnishing Company,
CHICAGO, ILL.

(Mention this paper when you write us.)

An Angler's Greeting

True anglers, true anglers, for many miles 'round,
Wherever I've sought them, good fellows I've found,
And let them be neighbors or let them be brothers,
To me a true hobber's more welcome than others.
With my rod while I roam, or my tackle put up,
Each weary piscator shall share my ale cup.
Then fill up each glass, and be blithe while you may,
To-morrow let's fish, but be merry to-day.

[Written for the UNITED STATES MILLER.]

Plain Talks About Milling.

By RICHARD BIRKHOLZ, M. E.

(Continued from June number.)

In regard to obtaining the best possible grinding results, yields and separations, I once more will compare the rolls and millstones.

For granulating wheat, the rolls give far better results than millstones. The bran is not pulverized so much by a series of reductions on rolls as it is by a single grinding with millstones.

Corrugated rolls of any dress, dull or sharp, will yield a larger percentage of middlings than can be obtained by stones, and what the millers of to-day care for principally are middlings; middlings of such a shape that they will admit of easy and perfect purification. As the wheat is handled from five to seven times on corrugated rolls, it becomes an absolute necessity to avoid the over-production of first flour, and it is evident that the sharper the corrugations of the rolls are, the less flour will be produced. Extreme sharpness of the rolls however may not be desirable, for when sharp dressed rolls are new and the corrugations "knife-sharp," the bran is cut up smaller than it should be and to some extent it is pulverized at the same instant and mixed with whatever small amount of first flour is produced. This undue sharpness, however, very quickly disappears. Three or four weeks are sufficient to remove this keen edge.

Dull dressed rolls will produce far more first flour, and consequently less and smaller middlings than sharp rolls. They will not produce sharp, square middlings and especially not the amount of coarse middlings, from 000 to 0, obtained by sharp rolls, even from the softest wheat.

The over production of first flour and fine middlings by dull dressed rolls is quite evident when the speed of the roller surfaces is taken into consideration. Dull rolls must run at least fifty per cent. faster than sharp rolls, in order to granulate the same amount of wheat. The grinding resembles a pounding or hammering on the wheat kernels and results in an unwished for yield of finest flour dust, depreciating the first flour and this result is still increased by the centrifugal force, increasing in proportion to the square of the velocity, by which much more dust is thrown off than by sharp rolls. This dust will, to a certain extent, escape through the crevices of the roller mill enclosures and contaminate the air breathed by the operatives, which is unquestionably prejudicial to health.

The bran reductions can never be made economically with dull dressed rolls. This seems to be an universally acknowledged fact. For grinding corn with rolls, they must be provided with sharp corrugations. I have tried it and have found the corn would flatten and leave the rolls caked, flattened ready to crumble apart. I also became aware of the greater power needed for I could scarcely turn the hand roll with which I made my experiments. Coarse middlings must not be ground, they must be *crushed*, therefore a millstone will never do for reducing coarse middlings. Smooth chilled iron rollers are best adapted for sizing or crushing coarse middlings. The oily germs will become flattened and pass over the tails of suitably clothed reels. Middlings up to No. 6 cloth may be crushed on smooth iron rolls, although porcelain rolls will flour better on those middlings and produce less dust middlings-returns, to be contended with.

Fine middlings (from No. 6 to No. 9 cloth), and dust middlings, (from No. 9 cloth to flour cloth), are best ground on porcelain rolls, not so well on stones, and poorly on smooth iron rolls. The advantage gained by grinding on porcelain rolls is *cool* grinding; the flour feels sharper and looks richer than flour ground on stones from the same stock. Porcelain rolls can be used right along while stones must lay idle every fifth day to be re-sharpened. In new process mills we cannot afford to have any tools idle, hindering the carrying on of the various things necessary to be done in regular rotation and automatically. In order to suit the American automatic system of milling, which we have worked so hard to learn and establish, a spare stone

ought to be provided for, if one stone or more are needed to grind certain stock. Here comes in extra capital invested and the salary of the stone dressers, the readers will understand, and,—here comes in a little story about porcelain rolls—

Some millers near Milwaukee bought a single Wegmann porcelain roller mill for second dust middlings. They were well satisfied with the work but not with the capacity to suit their requirements. The machine was sent back and a double one ordered. During a few days they ground the stock on a spare stone. It happened to be dull and almost every bag of bakers flour was returned to the mill. When the double porcelain roll arrived the difference of work was very cheerfully noticed.

One day the proprietors found the head miller and second miller standing at the roll cursing and swearing, and not mildly either. The air was full of blasphemy. "Let us send back this roll," was the cry of the miller, "it is not worth a continental!" The proprietors found it did not grind. They left the place in disgust and held a council to determine what the matter was. Soon they approached the roll again and saw the second miller looking pleased. He explained; the source of his delight was that the rolls were working all right. "What did you do?" "Well, I turned back the screw hand-wheels and at once I perceived the hissing of differential motion." Reason: The back-belts had become slack and the mill was "on a strike"; it flattened the stock but did not grind it. The proprietors told me about this and said that a stone was an indiscriminating worker grinding whatever was entered, caring nothing about the product, while the rolls had a certain instinct, they would "strike" when badly cared for, but they would never spoil the flour as the stone did some little time ago.

Scratched rolls will never perform the work of porcelain rolls. They will soon become dull and worthless. Porcelain rolls will stay sharp; they will work better than iron rolls on soft middlings, fine tailings and low grade stock.

To cheapen the roller machines some manufacturers resort to the use of long bodied rolls. A roll ought not to be more than 9 inches in diameter and 18 inches long; thus they are heavy enough for handling and self-adjustable enough for grinding. The stream of feed will become uneven sometimes, and a short roll will obey the unevenness more readily than a long one; a long feed gate is also hard to control. Suppose the rolls have to be pressed together per inch of length with 100 lbs; then the bearing of the 18 inch roll is pressed with 900, the one of the 36 inch roll with 1800. The least crowding of feed, say a nail should pass, and the pressure instantaneously increased, the sudden blow will be on a 36 inch roll increased to double the amount of the increase of pressure on an 18 inch roll. So much harder on the—nail!

As more middlings are made by new process milling, more purifiers become necessary. The best rolls cannot make a good yield if they are not helped by the purifiers. Also the breaks must be aspirated in purifier fashion to remove light bran, otherwise the bran will be liable to be cut up and powdered to some extent by the next granulating roll; the first flour will thus become more or less specky. The rolls must be aspirated, for the first soft flour dust sucked away does more good in the low grade flour bag than in the miller's lungs; the better flours also will present a sharper touch if the soft dust is eliminated. Dust catchers add to yield as shown above and are necessary in any good mill.

Centrifugal reels are indispensable for bolting the light and soft low grades.

The meal has not gravity enough to bolt well and would require several hexagonal reels for perfect separation, where one small centrifugal reel is sufficient. The beaters throw the meal gently against the revolving cloth, thus increasing the gravity of it artificially. But the centrifugal reel has another virtue. It works as a fan, sucking in air at the head end and working it towards the tail, the fine fuzz in the meal, stuff which would dash through the silk of an ordinary reel, is suspended in the air and carried over the tail into the feed. Elevator bolts or dash reels, the old French "Chasseurs" can never do the work of centrifugal reels; these elevator bolts, such as have been brought upon the market of late, consist of a winged spider and a cloth frame, the cloth standing slanting after the fashion of bolt gathers. The meal is thrown against the cloth and thus bolted. These machines are

noisy, as the cloth frames must be knocked frequently by a certain apparatus, also the cloth wears out very quickly. They do for bolting fourth and fifth middlings, provided those are attempted to be ground on iron rolls and leave the rolls caked. The elevator bolts will detach, this is indisputable, but they will not carry off low grade fuzz as they throw the meal with too much force against the cloth.

Business and trade is ruled and regulated by honest competition. One man succeeds by assiduity and perseverance in climbing up the pole that leads to success against great opposition. When up on top, pausing to enjoy a remuneration for his pluck and energy, hundreds of others, well aware that there are "millions in it" try to climb up the same pole with the view of pushing off the one ahead. They do the climbing, so to speak, with such irons on their feet as the telegraph men use; climbing is made easy for them. I am aware they even contrive to persuade Uncle Sam to issue patents on their *pe-cu-li-ar* foot-rigging in spite of what has been in use for years. They all tell the world that their tools work better than those of the man on top; if it was not for their confounded ill luck, they themselves, every one of them, ought to be *above* the one on top. They resort to misrepresentations often against their own persuasion, but *mundus vult decipi*! in plain English, "the millers must be deceived!" Millers, keep your eyes open and use your common sense. Honest competition at first laughed at the introduction of rolls, produced stones all the way down to six inches in diameter; all claimed to be better than rolls of course. When this claim had to be surrendered they got up chilled disks and dull dress rolls. "Sharp rolls would never do." When the millers became clamorous for noiseless rolls, honest competition struck the key-note by affronting the millers with the assertion that belts were never positive, gears were "the thing." Alas, they could not hold this point; they let go and adopted the belts, and at once honest competition pledged its honesty by advertising that belts were all right. Honest competition now cowhides its own rolls, for at first it claimed dull rolls made 95 per cent. of patent flour with but 5 reductions and now it advocates 7 reductions in order to make a still better yield and a proportion of the 95 per cent. of patent, a still better patent flour. The dull roll's work, like a woman's work, is never done. Honest competition first encouraged the millers seeking *cheap* work, by telling them that but few middlings were made; all that was necessary was to place 5 dull dress rolls and keep the stones for the middlings. Not any more purifiers or reels were wanted, etc. Now the same honest competition claims that more middlings were made by dull rolls than sharp ones. Funny, sharp rolls were used in Hungary years ago and every sharp tool becomes dull. What would you do if you found your knife worked better when it was dull? Would you re-sharpen it?

I must say that I am greatly pleased when hearing of important inventions made by fellow citizens. As a matter of course the entire nation will eventually be benefited by the credit granted to the shrewd inventor and we can, as fellow citizens, be proud of our success. But *our* inventions of dull, centrifugal and scratched rolls and rolls with surfaces impregnated, impressed with corundum flour, have yet to be proved more economical and practical than the *foreign* inventions of sharp corrugated and of porcelain rolls. I am afraid in this direction we stand but little show for laurels.

THE END.

The *Nation* (N. Y.) tersely says: "Not one man in a thousand can be induced to economize merely for the public good. Whatever he desires, or the party in power in his domestic administration demands, that he will have if he has the cash or credit to procure it. Whether the objective matter be a summer tour, a champagne supper or a seal-skin sacque, he will determine the feasibility of obtaining it by consulting, not the comparative statement of imports and exports for the nine months last preceding, but the condition of his own pocketbook or the figures of his bank account. If the result of this examination is clearly adverse to his wishes, he will probably, being a prudent and just man, deny himself the coveted indulgence. If there is a sufficient balance in his favor, he will delight his soul, pamper his palate and propitiate his wife and daughters, though another Black Friday should loom in the dim mists of the future, and the whole fabric of commerce be preparing to tumble on his head."

Technical Education.

Technical education is a subject that is just now attracting a good deal of attention in this country, not only among the teachers, whose special business it is to look after the training of the young, but among that larger and more numerous class of persons who are interested in the rising generation, as parents, philanthropists and reformers. Three things conspire just now to make this question prominent: (1) the necessity that is acknowledged to exist in the United States for training boys to become skilled workmen; (2) the selfish and stubborn disposition among the leaders of the different trade-unions to allow but a comparative few boys the privilege of apprenticing themselves to learn a trade, and (3) the influx of the immense number of foreign immigrants now flocking to our shore from the Old World, many of whom are skillful and experienced artisans and perfect masters of their pursuits, who are crowding the new beginners out of position.

These are the three branches of the question. The resident portion of our population who would like to see their children engaged in agricultural pursuits, begin to entertain well-grounded fears, if this large and ever-increasing volume of immigration continues, that there will soon be no good land to be obtained at a cheap rate, and certainly none in a few years to be had at Government price. So they are obliged to look about for other occupation for their boys beside the honorable, healthful and honest one of farming. They find all the so-called learned professions already full and running over, the supply far exceeding the demand, and yet all the colleges and universities contain thousands of others who are preparing to become lawyers, doctors or ministers. If a man would like to have his boys learn trades, he is confronted with opposition at the start, not from the proprietors of the manufacturing establishments, but from their workmen, whose societies limit the number of apprentices, and from their arbitrary decision there is no appeal. Hence it is that in sheer despair the American parent turns to the public schools for relief, and asks if that beneficent institution, which has done so much for his children already, cannot be made to help him in this emergency also, and establish a department for the technical education of his boys and girls at the taxpayers' expense.

The original intention of the common school system was to provide every child in the State, free of cost, with the opportunity of obtaining the rudiments of a good English education, and nothing beyond that. The old "saw" expressed the idea exactly, with the three R's—"Reading," 'Ritin' and 'Rithmetic." After a little there was an innovation, and the higher branches began to be taught in the common school. Still later, the High School system grafted upon the parent stalk, with its normal departments for training teachers, and its classical courses, to prepare young men to enter college. All this advancement has been strenuously resisted by some taxpayers and wealthy capitalists, who insist that it is done in violation of the fundamental principles upon which the common school system of this country rests. The most of the money that is raised for the support of the public schools comes from the pockets of the wealthy classes of the community, who do not send their own children to the common schools, but educate them elsewhere, after paying their full share towards the fund that defrays the expense of educating their neighbor's children. But these men should see the duty and propriety of helping those who cannot help themselves. They can afford to contribute of their wealth for the amelioration and elevation of the condition of the masses, for the general good and with a view to ultimate public economy.

Resistance to the proposed establishment of technical departments in the public schools will be opposed by the same class of men who oppose the High School and the teaching of the higher branches in the district schools. But technical education and the proper training of the young of both sexes, are undoubtedly among the most important and really necessary undertakings that now confront the present generation. Knowledge is power, and morality and intelligence go hand in hand. It would be a great thing if all our boys could be taught the use of tools and the arts of mechanism, as well as literature and science; and the claim of the girls, to be taught something relating to cooking and housekeeping, or to be trained in a way that will aid them in obtaining an honest and independent living, is as imperative and

ought to be heeded with as much respect as is paid to the demand of their brothers. The opponents of the education of our girls and boys in the practical arts and mechanical trades at public expense reason from a superficial standpoint and from a mistaken notion of economy. The best economy, as far as society and Government are concerned, is that which educates the masses in knowledge and trains them to self-supporting industry. No proposition in social or political economy is more demonstrable than that.—*Chicago Journal.*

The Food Speculation.

While hundreds of thousands of workingmen throughout this country are on "strike" because their wages, though nominally larger than those of corresponding laborers in other countries, yet are practically smaller, because their purchasing power is less in relation to social needs, the Chicago market reports relate "a remarkable rise in the prices of grain and provisions" yesterday—"the more remarkable in view of the existing high prices." For the details we refer readers to our market columns. "Corn," they say, "struck the highest price for years," and extraordinary speculative rises are also specified in oats, pork and lard.

When Wall street stock speculators win or lose we have no words either of congratulation for winners or pity for losers. That is an acknowledged gambling forum. But when hundred methods of speculation are applied to the necessities of human life the effect of a rise imperils the home comfort of millions of innocent families and endangers the public peace. The gamblers in meats and breadstuffs are adding what it is by no means impossible may be the last element needful to consolidate the discontent of workingmen into a political demonstration capable of confusing all the calculations of these party managers at Washington who are preparing for the coming political campaign in the old fashioned humdrum way.—*New York Herald, July 8, 1882.*

An Old Man's Fancies.

It is remarkable how the habits of life cling to a person, even during his last moments. The boys in the *Inter-Ocean* office hardly expected to find the old man at his case when they came to work in the morning, for when he had gone home the night before they had noticed his steps were very feeble. For over forty years he has held a case; first on a metropolitan daily, then on a country weekly, and then on a religious monthly. His hand was steady yet, despite his sixty odd years, and very few of his "a's" got into his "r" box. This bright sunshiny morning he came in and greeted his fellow-typos with a pleasant "good morning." The boys noticed his hand trembled somewhat, and that his voice was husky and uncertain, but they paid no particular attention to these things; the old man had been acting rather strangely for the last few days, and they attributed these failings to a gradually weakening constitution. He stood at his case for almost an hour throwing in, and had distributed nearly all his matter, when of a sudden and without any previous warning, his composing stick fell from his hand to the floor, and he himself tottered and would have fallen had not the boys sprung to his side and supported him to a chair in front of the fire. His head dropped forward on his breast, and his breathing became more and more rapid. The pressman ran for a glass of water, and returning held it to his lips. As the water touched his parched tongue a spasm of pain shot across his face, and his frame was convulsed with agony. With an effort which seemed almost superhuman, he dashed the glass upon the floor, and it was splintered into a thousand pieces. This effort seemed to arouse him somewhat, and he gazed about him with a bewildering stare.

"Boys," he said, "boys, are the cases all full?" "His mind wanders," whispered the foreman, in a low voice, and then said aloud as he bent over the old man, "Yes, Dick, old fellow, everything is thrown in."

"That's it, that's it," exclaimed the feeble old man, "there is nothing like having the galleys and stones all cleaned off," and he seemed to brighten up considerably, and made an effort to stir the fire with a warped side-stick, which the boys used as a poker.

"I've run short on em quads boys, and haven't enough to space out this poetry," he said, and his faltering fingers went through the motion of travelling over the case in search of the requisite metal.

"That's all right, Dick, we'll throw in some quoins and that will bring it all right," said

one of the boys in a sympathetic voice.

"Ah, Charley," said the old man, "that reminds me of the old Caseyville *Herald* days, when we used to drop out a dead 'ad,' and lock up the planer in the forms to fill out with. Fat times those," he continued; "they will never come back to the old man," and he leaned his head on both hands and swayed to and fro. The boys gathered around him more closely to prevent his falling.

One of the boys, in coming to the old man's side, stumbled over a chase which was leaning against a composing stand, and it fell to the floor with a loud crash. The old man sprang to his feet, and it was all the boys could do to restrain him. "You've pied the form," he shouted, "and it is time to go to press. What shall we do, what shall we do?" "Sit down, Dick, old fellow; it's nothing but an empty chase," and he gently placed the old man in the chair.

"You can't deceive me, Mac," and the tears stood in the veteran's eyes. "The form is pied and we ought to have been to press an hour ago. The folios are all wrong, Mac. See, here is page 102, backing up page 27," and the old man snatched a proof from the revise hook, and began folding it in a helpless manner. "It's all wrong, but it is too late," he gasped. "The press waits." Here his head sunk again upon his breast, and his breathing was thick and fast. "Yes, boys, lock up the forms and look out—look out for loose spaces."

The boys stood silently around the old compositor, and the scene was an impressive one in the extreme.

"The pages are all proved up, everthing all right," he murmured in broken accents. "Now, then, careful boys, lift off the forms, and clean off the stones, and before, before you start up the press—let us—jeff for the drinks."

He fell with a heavy thud to the floor, and the foreman, with the aid of the pressman, lifted him up and laid him tenderly on a pile of mail bags, under the cutter, and one by one the boys returned to their cases and left him to—sober up.—*Denver Inter-Ocean.*

Capacity of Dry Grain for Moisture.

The claim that grain absorbs moisture enough on a sea voyage to pay the freight charges has been verified by some test experiments made at the California Agricultural College. Various kinds of grain were placed in a moist atmosphere and the increase in weight was noted.

The greatest increase was during the first twenty-four hours, absorption being nearly 33 per cent. of the total absorbed during the fifteen days' exposure. The following table shows the figures.

	First. 24 hours.	Total. In 15 days.
Oats	2.79 per cent.	7.70 per cent.
Barley	1.45 per cent.	7.00 per cent.
Wheat	2.45 per cent.	6.56 per cent.

From the results obtained it was computed that perfectly dry grain at 64 degrees Fah. would absorb as follows: Oats, 29.08 per cent.; barley, 28.17 per cent.; wheat, 25.02 per cent. Under ordinary conditions the percentage is perhaps not so high, 15 to 16 per cent. probably being the average.

Utilizing Wave Power.

La Nature describes an apparatus to utilize the force of waves. It is an invention of M. Gauchez. It has a float weighing from thirty-five to ninety-five tons, as may be required, connected with a bell-shaped compressor by means of ropes or chains which pass over suitably arranged pulleys. The float of course, rises and falls with the action of the waves. When the float falls it raises the bell, which had been previously below the surface of the water, and as it empties itself of water the air rushes into it through openings in the top. As the float rises again the bell sinks, the water rises in it and, compressing the air, drives it out into pipes which conduct it to reservoirs on shore, where it can be distributed as required. There seems to be a very general effort at the present time to utilize all sources of mechanical power. The discovery of the Faure accumulator has done much to stimulate this. There is no doubt that soon there will be many better attempts than this of Gauchez's to capture "waste" force.

Spreading of rails under high temperature is a source of danger of the magnitude of which travellers know little. When the ends of the rails are too close, as they are very apt to be when laid by the usual rule of thumb way in cold weather, they are certain to press against each other and bulge out the track into a sort of double wave line in sum-

mer. Spikes will not cure the difficulty. Indeed, the less strain placed upon spikes the better for everybody. Here is the remedy for spreading which one now forever silent was about to put into practical shape and patent, but which may be here given free: No track for a railroad should be laid without a constant consultation of the thermometer and the application of gauges properly regulated for temperature. That is the general idea, the force of which will at once be seen by every railroad engineer. Inventors may find in this hint something valuable. A reliance on spikes against spreading might be shown to be nonsense by a little boy who had received his first lesson in "expansion" of bodies. The absence of spikes, though, may show that the rails had spread and that the inspection was negligent.—*New York Times.*

Few of the young mechanics of the present time appreciate the many advantages by which they are surrounded, making comparison with the situation as it was a generation ago. The young mechanic, who thinks it is harder to take the front rank at the present time than it was for his father to achieve excellence in the same pursuit in his time, should be reminded of the many advantages he enjoys that his father knew nothing about. In his fathers time there were no technical schools. Text books on mechanical subjects were almost unknown. No mechanical papers were published. Mechanical dictionaries were unheard-of things; large factories never dreamed of maintaining circulating libraries for the benefit of the mechanics employed. Popular lectures on mechanical topics were not thought of. Free night schools for instruction in drawing had never been attempted. And these are only a few of the many advantages that surround the young mechanic of the present time, the intelligent improvement of which will lead him on to success. It is with him, however, as with children who have too many toys; they soon learn to think so little of them as to fail to appreciate their actual value. So many advantages are crowded upon the young man of the present day as to leave him little opportunity of considering their value, or of learning to appreciate their worth. It is for this reason, with others, that so few of the mechanics who are surrounded with exceptional advantages reach eminence in their trades. A qualification that the mechanics of 40 or 50 years ago possessed, and which is sadly lacking in the youth of the present day is self-reliance and enterprise. Our boys have so many helps, and things are so generally prepared for them, both in the public schools and in other departments of our educational system, that they acquire the habit of abject dependence. They fail to acquire the habit of asserting themselves and investigating upon their own account. To this difference is to be ascribed, in many cases, the failure of the mechanics of the present day to profit by the unusual opportunities by which they are surrounded.—*The Artisan.*

Southern Waterpower.

The Santee river is the largest and most important of the southern streams, and its tributaries offer an enormous amount of excellent available power. On the Wateree river above Camden there is a fall of 8,000 horse power available. The Catawba river has the most remarkable power in the south, and at its great falls there is not less than 24,000 horse power, mostly available. The total power of the four falls of the Catawba river amount to 40,000 horse. At Columbia, S. C., the Congaree river has between 6,000 and 7,000 horse power available. The estimates of the power given refer only to the gross power available continuously, day and night, and in the driest seasons. For comparison, it may be added that the power at Lowell, Lawrence and Holyoke, Mass., is 10,000 horse at each place; at Manchester, N. H., it is also 10,000; at Paterson, N. J., it is only 1,100; and at Cohoes, N. Y., 14,000 horse power. The time cannot be very distant when many of these great natural forces of the south will be turning the busy wheels which will develop the boundless resources of a country so munificently endowed by nature.

THE Stilwell & Bierce Manufacturing Company, Dayton, O., sole manufacturers of Stilwell's lime extracting heater, Victor turbines, Odell's roller mill, and Eclipse double turbines, employ 90 hands. They were established in 1870 as a corporation. The company ships all over the United States and to foreign countries. Trade which has been very good the past season, is very favorable the present one.



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Made of best materials and in best style of workmanship.

Machine Molded Mill Gearing

From 1 to 20 feet diameter, of any desired face or pitch, molded by our own SPECIAL MACHINERY. Shafting, Pulleys, and Hangers, of the latest and most improved designs.

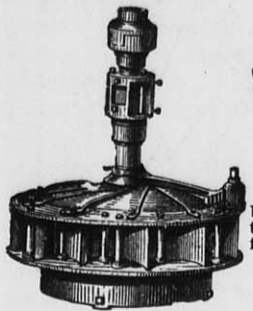
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The "OLD RELIABLE" with Improvements, making it the Most Perfect Turbine now in Use, comprising the Largest and the Smallest Wheels, under both the Highest and Lowest Heads used in this country. Our new Pocket Wheel Book for 1881 and 1882 sent free to those using water power. Address

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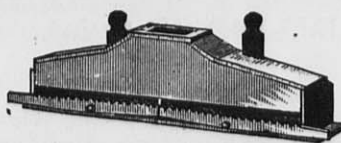
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Flouring Mill Contractors.
Send for Pamphlet.
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RICHMOND MANUFACTURING CO., LOCKPORT, N. Y.,

—Manufacturers of—

RICHMOND'S CELEBRATED

Smut Machines,

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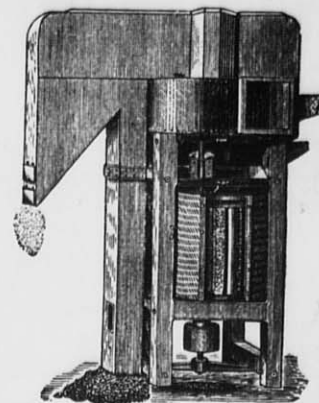
Grain Separators,

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Nearly Two Hundred of these Machines are now in operation in the city of Minneapolis, Minn., alone, and more than sixty in the city of Milwaukee, Wis. They are also extensively used in many other sections, both on Winter and Spring Wheat.

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Picks will be sent on 30 or 60 days' trial to any responsible miller in the United States or Canada, and if not superior in every respect to any other pick made in this or any other country, there will be no charge, and I will pay all express charges to and from Chicago. All my picks are made of a special steel, which is manufactured expressly for me at Sheffield, England. My customers can thus be assured of a good article, and share with me the profits of direct importation. References furnished from every State and Territory in the United States and Canada. Send for Circular and Price List.

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Mt. Sterling, Ill. May 25, 1882

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Respectfully yours,
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Mr. Ross' Flour being a straight grade puts it away ahead of lots of Patents and Roller Mill Flour. No other change was made in the Mill.

Correspondence solicited.

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Northwestern Mill Bucket Manufactory

310, 312, and 314 FLORIDA STREET.

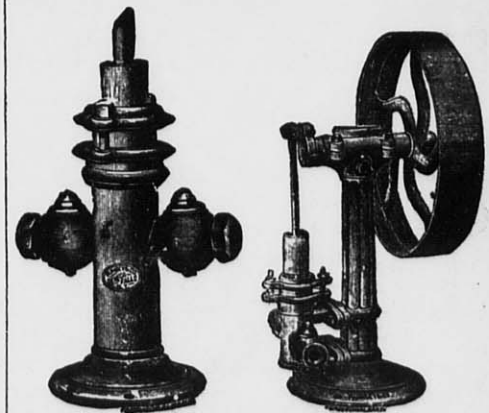


Is furnishing Mills and Elevators in all parts of the country with their superior BUCKETS. They are UNEQUALLED for their SHAPE, STRENGTH and CHEAPNESS.

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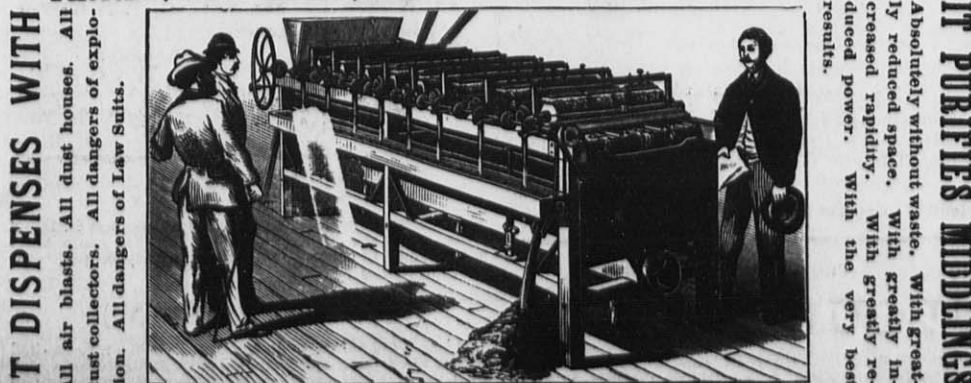
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LOW IN PRICE,

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Licensed Under all Patents

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Simple, Easily Adjusted,

Two Thousand SMITH PURIFIERS were Sold in 1881.

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The Smith Purifier has a Positive and Effective Means of Cleaning the Silk of the Sieve. The Smith Purifier has Graded, Controllable Air Currents. It is Impossible to do Good and Economical Work without these Features.

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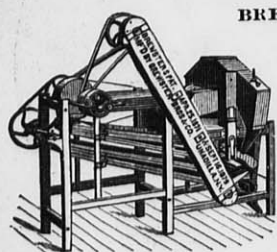
1. It is because they do better work.
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8. Last, but not least, by any means, they elevate their own middlings any height and distance necessary, thereby saving an expense, in setting up and starting, of from \$50 to \$150. Right to use fully protected and guarantee given.

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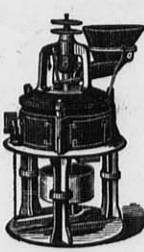
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BREWSTER'S CELEBRATED Buckwheat Refiner
Is the only Machine whereby the greatest yields of
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GRINDS COOL, SELF OILING,
GREAT SAVING OF POWER,
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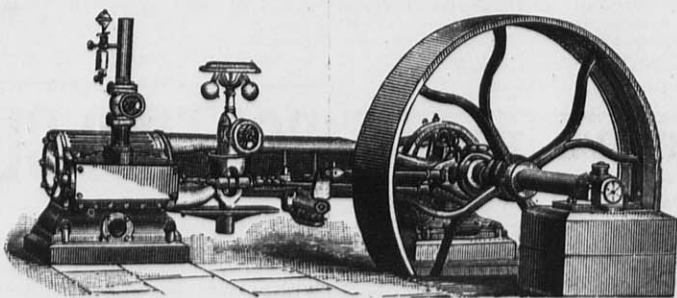
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For the more complete protection of our customers, and to put an end at once and forever to the demands for royalties by which they have recently been annoyed, we have purchased **ALL PATENTS** relating to Purifiers, lately owned by Huntley, Holcomb & Heine, including the well-known **MIDDLETON PATENT** and its several re-issues.

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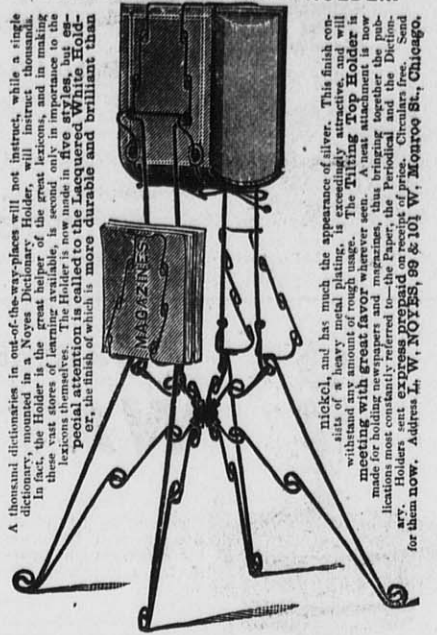
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Consignments Accepted.

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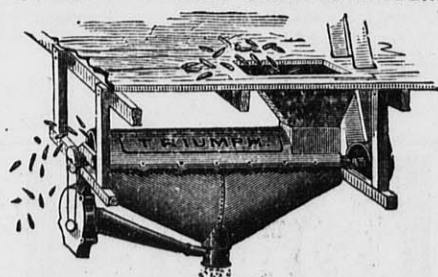
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Shells and Cleans 2,000 Bushels Ears per Day.

The Cheapest, Best, and most Simple Power Corn Sheller in use. Send for Circular and Price List.

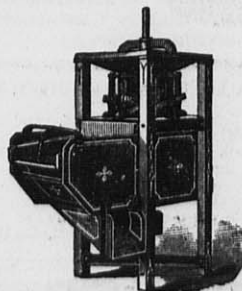
Manufacturers of Steam Engines, Mill Builders and Mill Furnishings.

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NEW CORN SHELLER.



The only Self-Adjusting Sheller in use that will

SHELL MIXED CORN,

FAST AND WELL,

And that will clean it THOROUGHLY.

Easy of access to all parts liable to clog. Thoroughly made. Sold as cheap as the cheapest.

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Founders and Machinists and Manufacturers of Marshall's Rotary Force Pump. Improved Jonval Turbine Water Wheel, etc.

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For two dollars and upwards. Also RUBBER STAMPS, BURNING BRANDS, SEALS, STEEL NAME STAMPS, LETTERS AND FIGURES, Etc. Orders promptly attended to.

CHAS. H. CLARKE,

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STEEL CAR PUSHER

Made entirely of STEEL. ONE MAN with it can easily move a loaded car. Will not slip on ice or grease.

Manufactured by **E. P. DWIGHT,** Dealer in Railroad Supplies, 407 Library St., Philadelphia, Pa.

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A FACT.

I sell my flour in competition with the best St. Louis Mills. I get the same price. My Mill has made a net profit, since the harvest of 1881, of nearly 50 per cent over the cost of the Mill.

(AN OPINION.)

I could not afford to do without the Slater Reels if I had to pay twenty-five dollars a month for the privilege of using each Reel in the mill. This is the statement of Mr. J. W. Buky, of Nicholasville, Ky.

C. B. SLATER & CO.
Blanchester, O.

Electric Lighting in Mills.

BY A. HEMPEL, MANAGER OF HAUZEUR'S FLOUR MILLS, LIEGE.

[Translated from the "Ungarischen Mühlen Zeitung" for the Corn Trade Journal.]

Every miller will acknowledge that fires in mills are extraordinarily frequent. The high premiums asked by good insurance companies proves this, besides which it is often difficult to save anything, the mill being full of easily inflammable material. There are two causes from which fires often spring: first, the empty running of the stones and the ignition of the flour dust; secondly, in the means by which a mill is lighted, such as by rape-oil, petroleum or gas. When an open flame comes in contact with an inflammable body there is always danger, which can be reduced by precaution or limitation of the flames, but never quite prevented. The mill managed by me used to be a "stone" mill, but few people were required to work it, especially as after 6 p. m. neither stonemen nor ordinary workmen were occupied in the mill; but few oil lamps were therefore sufficient.

The introduction of rollers, and with them the increase of machinery for cleaning, sifting and purifying, made a more extended lighting of the mill necessary. Oil and gas would have been very expensive, the mill being far outside the town, besides being, like cheap petroleum, dangerous. Many recent fires in theatres have been caused by gas. I therefore adopted the electric "glow" light. As is known, Edison's, Maxim's, or Swan's lamps mostly give the violet-white light, which generally comes from a strong current, dazzles the eye and throws deep shadows, and therefore cannot be used in a mill, where it is necessary to light up all machinery and corners. The light of an incandescent lamp is not stronger than that of a large petroleum burner, and has just the color and steadiness of petroleum or gas. The lighting substance is a piece of carbon about 30 m. m. high and 1 m. m. broad, in the form of a horseshoe or an M, or like Swan's, of the shape of an S. It is enclosed in an almost absolutely airtight glass ball of 50 to 60 m. m. diameter. It can be put on any stand at the wall of the mill, or fixed on gas burners or hanging lamps, and brought in connection with the electric current. The following is the plan pursued in our mill. The electric current is produced by a dynamo-electric machine, Gramme's system, the so-called normal size, 1,200 revolutions and 4 h. p. The lamps are Maxim's, they have 70 ohm resistance, which must be as equal as possible; lamps of 55 to 60 or 70 ohm must not be used, otherwise they will "red," because the quickness of the current would not be uniform. The current, with unequal lamps, would be just as irregular and inefficient as a stream of water running through continually widening and narrowing. Two thick cables form the principal current, which is branched off through medium wires, and then is led to the lamps through still thinner wires. The current must be well and correctly calculated in their strength. Wherever the workmen have to work there is a lamp; as, however, the lamps have a limited duration, I fix to each a current interruptor, in order to burn it as long only as necessary. When well applied, a Gramme machine is sufficient for 30 Maxim lamps of 70 ohm resistance. I now put half of the lamps, that is those which burn uninterrupted, from the night till the morning, upon one series, and the other half, only for temporary purposes, upon the other series. In the latter are included the grain stores, the offices, and my dwelling rooms. The lamps at present constitute the chief outlay; they burn about 1,000 hours, cost 10fr. each, and cannot be repaired. Therefore they should only be used when necessary till the price of them has gone down, which will probably be the case shortly. With a more general introduction of this system of lighting these lamps could very well be supplied for 2 marks. Even now the electric light does not cost much more than petroleum. The establishing of this light, including 50 lamps with the necessary supports, costs about 2,500 marks, (£125); 25 lamps, which would burn on an average 12 hours daily, would cost about 800 marks (£40) per year. The other charges may be calculated by the above items, not forgetting the decreased premium for insurance which every insurance company, taking its own interest into consideration will allow. The security against fire is absolute; the lamps are air-tight, therefore hermetically closed, and can be used in the most dangerous parts of the mill—that is, in the mixing and stove rooms. They do not get very hot, and if by accident the glass should be broken, the oxygen will consume at once the thin piece of carbon and the light goes out. Therefore I consider these lamps the ideal of mill lighting, and think that shortly they will be generally introduced. As soon as they can be produced cheaper, which the larger consumption must soon bring about, this manner of lighting will vanquish all other methods. There remains only to remark that another great advantage of these lamps is that they need no attention, cleaning, or putting in order. The belt of the dynamo-electric machine is simply put on, and the whole mill is illuminated. The use of matches is entirely done away with. New lamps can be put on with the same ease as a simple lamp chimney. Gramme's machine, as also those of Siemens, Halske, Berlin, are built in different sizes, therefore with a larger ma-

chine than the above named a larger number of lamps could be used.

Creased Rolls.

Messrs. R. G. Shuler & Co., of Minneapolis, in a recent communication say:

"We are using all creased rolls. This we find gives the best results in all cases. The possibility of the extraction of the germ would be the most questioned by those not familiar with the process, but corrugated rolls will extract the germ equally as well as smooth, and leave the flour in a better granulated condition to bolt and producing a better final result. The sizing of the middlings is as important in its place as any other step. This the creased rolls perform with better results than the smooth. Now while we are advocating the creased roll it must be well understood that good results can not be obtained without the proper corrugation and adjustments. On corrugations depend several points that are important. In reducing middlings to flour it is quite essential that the rolls should be held with absolute accuracy and solidity, as no oscillating movement can granulate evenly. This point is largely embodied in the adjusting arrangement of the rolls. The adjustment should be such that when the material is shut off the rolls will not run together while in motion. This proves the condition of the rolls while operating on the middlings, showing that their revolutions are accurate and without any oscillatory movement. Impurities contained in middlings going to the rolls to reduce to flour can be separated from the flour better than middlings in the same condition reduced to flour by a stone. The system of bolting with rolls should be different from that used with stones. Mills of a capacity of one hundred barrels per day can be built with a sum that will warrant the expense. Light powers that have been valueless with stones can be made profitable with rolls, as they take much less power. The durability of these rolls will not stand in the way of their use."

NEWS.

JONES & SON, Alton, Mich., have sold out.
W. PERCIVAL, Bloomfield, Cal., has gone out of business.
WM. JOHNSON, of Johnson Bros., Chelsea, Penn., is dead.
PETER MANN, New Albany, Ind., has sold out to J. M. Haines.
RENNER & REED, Altamont, Kansas dissolved. Renner succeeds.
ROGERS & BICKNELL, Colusa, Cal., has dissolved partnership.
CORL & RANK, Canton, Ohio, burnt out. Loss \$15,000; insurance, \$3,000.
VOGEL & SON, Toledo, Ohio, burnt out. Loss, \$37,500; insurance, \$22,600.
GEO. T. CHESTER & CO., Lockport, N. Y.; firm style changed to Geo. T. Chester.
MCAFEE & MCCONNELL, Canton, Ga., burnt out. Loss, \$7,000. No insurance.
MOODY & BRO., San Jose, Cal., have dissolved. D. B. Moody continues.
W. M. BEAGLE, Pendleton, Oregon, has sold out to Thompson & Barnhart.
E. BRIGGS & CO., Roodhouse, Ill., have dissolved. Ellis Briggs continues.
MCFARLAND & ERICKSON, Genesee, Idaho, have dissolved. W. A. McFarland retires.
PALMER, HOUSE & CO., Lockland, O., have dissolved. G. G. Palmer and J. W. Dunn retire.
J. L. ALLARD, Paducah, Ky., has put in six pairs of rolls in Gray's Noiseless Belt Roller Frames.
L. SCRAMLING, of Victor, N. Y., has ordered of E. P. Allis & Co., one of their gradual reduction machines with sharp corrugated rolls.
JONES, BALLARD & BALLARD, Louisville, Ky., have put in two pairs of 9x24 smooth rolls in Gray's Patent Noiseless Roller Frame.
WILFORD & NORTHWAY, Minneapolis, have ordered 4 pairs of porcelain rolls in Gray's Patent Noiseless Roller Frame.
MESSRS. E. P. ALLIS & CO., have recently shipped six pairs of their porcelain rolls to the mill at Stockton, Cal.
J. L. ALLARD, Paducah, Ky., has put in three pairs of Wegmann rolls from the works of E. P. Allis & Co., Milwaukee, Wis.
JOHNSON & JARRETT, Des Moines, Iowa, have ordered from E. P. Allis & Co., 8 pairs of rolls in Gray's Patent Noiseless Frame.
MESSRS. HARRIS BROS., Mt. Pleasant, Mich., have put in a double set of Allis Rolls in Gray's Noiseless Frame.
R. STELLING, Port Washington, Wis., has ordered from E. P. Allis & Co., eight pairs of rolls in Gray's Patent Noiseless Roller Frames.
MESSRS. EDW. P. ALLIS & CO., are having a heavy trade from Ohio in their celebrated rolls in Gray's Patent Noiseless Frames.
SMITH & GIDDINGS, Danville, Ill., are putting in a line of smooth and porcelain rolls in Gray's Noiseless Belt Roller Frames.
At Dallas City, Ill., F. J. Mauck is putting in six pairs of Allis Rolls in Gray's Patent Noiseless Frames.
THE TOPEKA MILL CO., Topeka, Kan., are putting in twenty-six pairs of rolls from Edw. P. Allis & Co., fitted in Gray's Noiseless Belt Roller Frames.
F. J. MAUCK, Dallas City, Ill., has put in a full line of Allis Rolls, including two pairs of porcelain rolls in Gray's Patent Noiseless Roller Frames.
CHISHOLM BROS. & GUNN, have recently placed orders with Messrs. E. P. Allis & Co., for rolls aggregating thirty pairs to run in Gray's Noiseless Roller Frames.
MESSRS. EDW. P. ALLIS & CO., Milwaukee, Wis., have just received an order for a 125 horse-power Reynolds-Corliss Engine for the new mill of T. J. Cox, Bloomington, Ill.

ROBERT S. WILLIAMS, late head miller of the Empire Mills, Milwaukee, has gone to Michigan to start up a new roller mill.

C. A. ROBERTS, Fargo, D. T., has recently ordered from E. P. Allis & Co., 12 pairs of rolls in Gray's Patent Noiseless Belt Roller Frames.

MESSRS. E. P. ALLIS & CO., have shipped three pairs of their porcelain rolls in Gray's Noiseless Frames for the mill at Franklin, Pa.

E. MIDLETON & SON, Greenville, Mich., have ordered from E. P. Allis & Co., a pair of Wegmann porcelain rolls in Gray's Patent Noiseless frame.

MESSRS. IGLEHART BROS., and the Melrose Milling Co., both of Evansville, Ind., have ordered Allis Rolls in Gray's Patent Noiseless Frame.

MESSRS. E. P. ALLIS & CO., Milwaukee, Wis., have furnished the Salem Flour Mill Co., Oregon, with a full line of porcelain rolls in Gray's Patent Frame.

THE new mill of the Goodlander Mill and Elevator Co., at Fort Scott, Kan., will have a full line of the Allis Porcelain Rolls in Gray's Noiseless Roller Frames.

MESSRS. KEYNES & WILLMAN, Logan, O., have put in a full line of Allis Rolls in Gray's Patent Noiseless Frame including 8 pairs of the Allis Porcelain Rolls.

L. M. KELLOGG, of Missouri Valley, Iowa, has recently ordered from Messrs. E. P. Allis & Co., two of their gradual reduction machines, each making two breaks and separations.

THE Camp Spring Mill Co., St. Louis, have added to their equipment 12 pairs of rolls in Gray's Noiseless Belt Roller Frames from Edw. P. Allis & Co.'s works.

MESSRS. J. C. HOFFMAYER & CO., Council Bluffs, Iowa, have given Messrs. Edw. P. Allis & Co., their order for fourteen pairs of rolls in Gray's Patent Noiseless Belt Roller Frames.

DURING the first half of 1882, track was laid, in this country on nearly 4,500 miles of new railroad, against 1,972 in the corresponding period of 1881.

MESSRS. EDW. P. ALLIS & CO., have shipped sixty pairs of rolls in Gray's Patent Noiseless Roller Frames for Sperry & Co's mill at Stockton, Cal.

MESSRS. JOHNSON & CO., of Franklin, Penn., have put in three of the Allis Gradual Reduction machines and six pairs of Allis Rolls in Gray's Noiseless Frames, thus making their mill a full gradual reduction roller mill.

JOHNSON & CO., Franklin, Penn., have ordered from Edw. P. Allis & Co., three of their gradual reduction machines, each making two breaks and separations, and six pairs of porcelain rolls in Gray's Noiseless Roller Frames.

MESSRS. ORDWAY & SON, of Beaver Dam, Wis., have just ordered of E. P. Allis & Co., eight pairs of rolls for the mill at Columbus, Wis., and eight pairs for the mill at Mayville, Wis., all in Gray's Noiseless Frames.

MESSRS. D. L. WING & CO., of St. Louis, Mo., have recently put in 12 pairs of Allis Rolls in Gray's Noiseless Belt Roller Frame furnished by Edw. P. Allis & Co., Reliance Works, Milwaukee, Wis.

THE Salem Flour Mill Co., Salem, Oregon, has recently put in a full line Gray's Patent Noiseless Belt Roller Mills from the well-known Reliance Works of Messrs. Edw. P. Allis & Co., Milwaukee, Wis.

THE Great Western Manufacturing Co., of Leavenworth, Kan., have recently ordered from E. P. Allis & Co., Milwaukee, Wis., 10 pairs of smooth rollers in Gray's Patent Noiseless Roller Mill Frames.

MESSRS. DOW, GILLMAN & HANCOCK, Davenport, Iowa, have contracted with Messrs. E. P. Allis & Co., Reliance Works, Milwaukee, Wis., for the erection of a 350 barrel roller mill. It will contain 36 pairs of Allis Rolls in Gray's Patent Noiseless Roller.

MESSRS. E. P. ALLIS & CO., have the contract for remodeling the mill at Independence, Iowa, owned by the Independence Mill Co. When completed, the mill will have a full outfit of sharp corrugated, smooth and porcelain rolls, running in Gray's Patent Noiseless Belt Roller Frames.

MESSRS. E. P. ALLIS & CO., are overhauling the mill at Canton, O., owned by Corl & Rank; the work is in charge of M. Shook, and is being pushed with his accustomed energy. The mill will contain 11 pairs of Allis rolls in Gray's Noiseless Frame.

MESSRS. EDW. P. ALLIS & CO., of Milwaukee, have recently sold Andrew Bowling, of Staunton, Va., 10 pairs of rolls in Gray's Patent Noiseless Belt Roller Frames and also two of Gray's Gradual Reduction Machines, each making two reductions.

MESSRS. HERZOG & ROBERTS, of Racine, Wis., whose mill was burned at the time of the big fire, some time since, have contracted with Messrs. Edw. P. Allis & Co., Reliance Works, Milwaukee, Wis., to build them a 150 barrel roller mill. Twenty pairs of rolls in Gray's Noiseless Belts will be used.

MESSRS. E. P. ALLIS & CO., Reliance Works, Milwaukee, Wis., have just taken the contract to change the mill owned by the Centennial Mill Co., Avoca, Iowa, to the roller system. When finished, the mill will be of 150 barrels daily capacity and will contain 12 pairs of rolls, corrugated, smooth and porcelain, all in Gray's Patent Noiseless Frame.

THE change in opinion among millers is becoming more and more decided in favor of porcelain rolls for use where smooth and scratch rolls have been employed. Messrs. Edw. P. Allis & Co., who are the sole manufacturers of porcelain rolls in this country under the Wegmann patents, have so far this year sold a large number of their rolls in Gray's Noiseless Frames and the orders are coming in faster all the time.

THE new Phoenix mill at Davenport, started up for the first time a couple of weeks ago, to give the machinery a trial. A few necessary changes have yet to be made, before everything is in smooth running order. The new mill is a beauty, and it is fully worth anybody's time to look through it. None of Davenport's business men more deserve success than the plucky proprietors of the Phoenix, and we sincerely hope they have met and conquered their last misfortune.

C. R. Knickerbocker, Esq., President of the Geo. T. Smith Middlings Purifier Co., of Jackson, Mich., has purchased the fine mill property at Albion, Mich. His son Wm. B. will aid him in looking after it.

POSTMASTER McKAY, of Cedar Bluffs, Kan., desiring to build up his town, has, together with Mr. Jenkins, commenced the erection of a three-run flouring mill, the machinery for same being furnished by Nurdyke & Marmon Co., of Indianapolis, Ind.

There is a project on foot to build a \$50,000 flouring mill in Abilene. It is expected to be run by water, and for that purpose the feasibility of putting in a dam at Sand Springs and running a waterway or ditch down to the city is being considered.

BACON & EINSEL, of Tiffin, O., have just started up their new mill on the Case Gradual Reduction System. Their mill is full of machinery made by the Case Co. E. Corbett, head millwright of the Case Mfg. Co., planned the job.

Mr. Knickerbocker does not by any means withdraw from active service with the Purifier Company, but will endeavor, if possible, to obtain a little more rest and relaxation than he has been able to enjoy in past years.

MESSRS. EDW. P. ALLIS & CO., Reliance Works, Milwaukee, Wis., have the order for one hundred and twenty pairs of rolls for the Zeidler-Zimmerman mill at Minneapolis, these rolls will all run in Gray's Patent Noiseless Roller Frames.

THE C. A. Gambrell Mfg. Co., of Baltimore, Md., are putting in a large line of machinery made by the Case Mfg. Co., Columbus, O. Including Double Purifiers, Reduction Machines, Scalping Reels, &c., &c. The same Company also have just made them cloths covering 22 reels.

THE value of winter wheat grown in Illinois during the past five years, shows an average of \$4.97 greater profit per acre than spring wheat, and the limited profit attending the growing of spring wheat may in part account for the decreased acreage from year to year, which is less this season than for some years past.

A 125-barrel gradual reduction mill is being built by Helm & Cook, of Fond du Lac, Wis. The motive power will be a Comméramatic engine and Nurdyke & Marmon Co.'s belted roller mills will be used. The balance of machinery will be made by Nurdyke & Marmon Co., of Indianapolis, Ind.

THE following parties have bought the well-known Cone Shape Becker Wheat Brush in the past few days, made by the Eureka Manufacturing Co., of Rock Falls, Ill.: Jos. Kratochwell, Dayton, Ohio; Chas. B. Slater & Co., Blanchester, Ohio; Geo. W. Moredock, Pomeroy, Ohio; Beckley & Phipps, Paynesville, Minn.; Hamilton Bros., Salem, Ill.; Adolph Dehner & Co., St. Louis, Mo.; Jas. McWilliams, Dundas, Ill.; Richmond City Mill Works, Richmond, Ind.

THE Goodlander Mill and Elevator Co., at Fort Scott, Kan., are remodeling and enlarging their mill at that place, making it into a complete roller mill of from 250 to 275 barrels capacity. Messrs. Edw. P. Allis & Co., Reliance Works, Milwaukee, Wis., have the contract and will fit the mill with a complete line of their corrugated, smooth and porcelain rolls, all in Gray's Patent Noiseless Belt Roller Frames. The mill will be ready to start in about sixty days. The mill will be driven by an 18x24 Reynolds-Corliss Engine manufactured by Messrs. Allis & Co.

GREAT excitement was produced in St. Louis recently by the announcement that the board of trade of East St. Louis had appointed a grain inspector with the instructions to inspect all grain that arrives by railroad in East St. Louis, Ill., and all that goes out by barges from elevators. Heretofore, all grain that has arrived on either side of the Mississippi river has been inspected by inspectors appointed by merchants on 'Change in this city, and the inspectors have been uniform and according to St. Louis standards; but should the new order of things prevail, grain arrivals at St. Louis will be inspected by Chicago standards. Endless confusion will ensue, and great damage be done to the grain trade of St. Louis.

IN the suit recently decided between Ganz & Co., of Buda Pest and the firm of L. Nemelka, of Vienna, original manufacturer of the round corrugated roll (in use since 1871), and who has been of late infringing upon the Ganz patents for a sharp cutting roll, an injunction was granted against Nemelka who will return to the manufacture of the non-cutting roll. The patent of Ganz & Co., issued in 1875 is a very broad one, claiming the use of chilled cast iron as a material for the construction of rolls, the spiral grooving of the same, and the differential motion.

R. H. KNOX, an old Minnesota miller, died recently of consumption, aged 71. He went to Minnesota in 1851, and built a flouring mill for James M. Winslow, on Trout Brook, near St. Paul. In 1856 he built the Oronoco Mill in Olmstead County; in 1857 he built for R. C. Knox the first flouring mill built in Cannon Falls; and in 1858 he was elected a member of the Second Minnesota Legislature. He had charge of the Spring Creek Mills for a number of years, while owned by W. W. Phelps, after which he returned to Cannon Falls where he had resided for six years past. He was highly esteemed among his associates.

At the breaking out of the war there were no flouring mills in Nashville, Tenn.; now there are eight. Noel's Mill and Elevator Company have two large mills, at which 75,000 barrels of flour 500,000 bushels of corn, 200,000 bushels of oats, 200,000 bushels of wheat, 1,000 tons of hay are handled annually besides all the wheat used at the Jackson Mills amounting to 375,000 bushels. The Riverside flouring mill a large brick structure, with a capacity of 130 barrels of flour per day, or 30,000 per year, employs twelve hands. The Reservoir Mill is a large four-story brick building owned by Sax Bros., but not in operation. The New Era Mill Company do a business estimated at \$400,000 and employ thirty-five men. They have connected with their mill a large warehouse. Lanier's Mill, with a capacity of 400 barrels of flour per day, is valued at \$100,000. The City Mills have a capacity of 100 barrels of flour per day, employ fifteen hands, and carry a stock valued at \$12,000. The Shamrock Mills have a capacity of 100 barrels of flour per day.

Crop Report for July, 1882.

[From the report of the Department of Agriculture of the United States, compiled from accurate returns by telegraph, July 12, from 1,600 counties.]

MAIZE.—The July returns indicate an increase of area planted in corn exceeding 4 per cent., or fully 2,500,000 acres. In Ohio, Indiana and Illinois there has been a loss of acreage, but in all other states of any prominence in corn-growing there is some increase. In the Gulf States the advance has been heavy, in obedience to the instinct of self-preservation. The usual result of high price of a crop, an immediate extension of its breadth of cultivation, was prevented in the Ohio Valley only by excessive rains and a temperate that made early planting impossible.

The States and Territories reporting a decreased area are: Maine, 1 per cent.; Ohio, California, Utah, 2; Nevada, 3; Indiana, 3; Illinois, 2; Washington, 9. New York, Rhode Island and Oregon report the same area as last year. New Hampshire, Pennsylvania and Delaware make 1 per cent. increase; Vermont, New Jersey, Maryland, Wisconsin, Missouri and Colorado, 2; Massachusetts, North Carolina, West Virginia, Michigan, and Iowa, 3; New Mexico, 4; Connecticut and Virginia, 5; Louisiana and Tennessee, 6; Mississippi, 7; South Carolina, Florida, Arkansas, and Kentucky, 9; Kansas, 11; Nebraska, 12; Georgia and Alabama, 13; Texas, 17; Minnesota, 26; Dakota, 46. Though the percentage of Minnesota seems large, the corn area of that state has until recently been less than that of two counties of Illinois.

The condition of corn is marked low from late planting, cold and wet weather, and replanting after floods, but has been improving during June, and is generally in fair vigor and active growth, promising far better condition in August, should the season continue as favorable as at this date. The general average is 85, against 90 in July last year, before the disastrous drought set in. It is above 100 in all the sea-coast states from South Carolina to Texas, in Tennessee, Kansas and Kentucky; Oregon and Nevada stand at 100; Arkansas, 97; New Hampshire, Connecticut, New Mexico, 96; North Carolina, California, Utah, 95; Maryland, Virginia, Colorado, 94; Massachusetts, Missouri, West Virginia, 92; Vermont, Dakota, 92; New Jersey, Delaware, Nebraska, Washington, 91; Maine, New York, Michigan, 86; Ohio, 84; Minnesota, 83; Pennsylvania, 82; Rhode Island, Wisconsin, 80; Indiana, 79; Iowa, 72; Illinois, 68. The State of largest acreage stands lowest of all in condition.

WHEAT.—The condition of winter wheat averages 104, which is a higher figure than at any previous July since 1874. In that year spring wheat averaged 96 in July, but before harvest condition was much reduced by drought, grasshoppers and chinchies, so that the average yield of the entire wheat area of the country was little above the average, or 12.3 bushels per acre. In 1877 and 1878 the winter wheat average was 103, and the yield, with a better season prior to harvesting and a better condition of spring wheat, was 13.9 bushels in 1877 and 13.1 in 1878. Now, with the spring wheat breadth at 100, with a favorable season until harvest, the yield ought to average 13 bushels, probably, 13.5 at least, which would give a crop of 5,000,000 bushels. Should the excessive growth of straw be deceptive, and the outcome in thrashing be less than is expected at the time of harvesting, there might be some falling off from such an aggregate; and should the condition of spring wheat be reduced before the harvest a similar reduction would follow. If both contingencies should occur together, the yield would not probably be reduced below 12 bushels, which is about the usual average for any consecutive series of years, and this would give a crop of about 450,000,000 bushels, or nearly as much as in the census year, the year of the largest aggregate production, with one exception.

In July, 1881, the average for winter wheat was 89, and of winter wheat 89, and the result as estimated was 10-1 bushels per acre, the lowest yield ever reported by the department. The next lowest was 10.4 bushels in 1876, when the July condition of winter wheat was 94 and of spring only 81, a worse failure of this variety than in 1881, on account of grasshoppers and chinchies. The winter wheat was afterwards injured by unfavorable weather and insect ravages in July. No other season of the past ten years has produced less than 11 bushels per acre. The following is a statement of the crops of the last ten years, showing the coincidence of July condition and ultimate yield, modified only by the various character of July and of August upon spring wheat:

Years.	July condition.		Yield per acre	Product.
	Winter.	Spring.		
1873	90	104	Bushels.	Bushels.
1874	104	96	12.3	281,254,700
1875	76	96	12.3	308,102,700
1876	94	81	10.4	292,136,000
1877	103	99	13.9	364,194,146
1878	103	103	13.1	420,122,400
1879	97	92	13.8	448,756,639
1880	95	92	13.1	498,549,868
1881	80	89	10.1	380,828,009
1882	104	100		

For the condition of winter and spring wheat at the present time reference is made to the table. Among the principal winter wheat states Ohio averages 101; Kentucky, 104; Michigan, 106; Indiana, 114; Illinois, 115; Missouri, 111; Kansas, 116; Pennsylvania and the Southern States stand without exception at 100 or above; California at 99; Oregon, 105.

The spring wheat States' averages are: Wisconsin, 95; Minnesota, 94; Iowa, 98; Nebraska, 105; Dakota, 98; Colorado, 98; Maine, 101; New Hampshire, 102; Vermont, 91.

The harvest of winter wheat, on the first of July, was completed in the South, was in active progress in Kentucky, and commencing north of the Ohio River. At this date it has reached the latitude of 40 degrees, and will soon be completed.

The local changes in condition were generally favorable during the month of June. In New York marked improvement was reported; the figures are changed from 84 to 99. In New Jersey they are 97 now against 92 in June. From Pennsylvania, where the condition is indicated by 106, to Texas, inclusive, whose figures are 100, the figures are high almost beyond precedent, and the previous favorable record is con-

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5. **Dudley Carleon**, a novel, by Miss M. E. Braddon;
6. **Essica**, or THE MYSTERY OF THE HEADLANDS, a novel, by Etta W. Pierce;
7. **A Golden Dawn**, a novel, by the author of "Dora Thorne;"
8. **Valerie's Fate**, a novel, by Mrs. Alexander;
9. **Sister Rose**, a novel, by Wilkie Collins;
10. **Anne**, a novel, by Mrs. Henry Wood.

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tinued without drawback to the harvest. Alabama stands at 105; North Carolina, 106; Virginia, 109; Delaware and Maryland, 110; South Carolina, Tennessee, and Arkansas, 113; Mississippi, 114; while Georgia leads the list at 122. Still there are localities where rust, the old enemy of wheat in the South, put in an appearance. In Montgomery, Virginia, it "blasted the best prospect in twenty years," and its presence is mentioned in North Carolina, Tennessee, West Virginia, Kentucky, Indiana, Illinois and Nebraska, but almost invariably without indication of serious damage to the grain.

The grain aphid is numerous in some of the Middle and Southern States. Insect injuries cannot be considered very serious in any portion of the wheat breadth.

RYE.—The condition of rye is very similar to that of wheat. Nearly all the States are represented by an average not less than 100. Only Maine, New Hampshire, New York, New Jersey, Alabama, Texas, California and Arizona Territory fall slightly below that figure.

The other States range from 100 upwards.

OATS.—This crop is in high condition, represented by the percentage 103. The Eastern and Middle States fail by a point or two to reach 100; the South and West and the Pacific coast and Rocky Mountain Region are above the standard of medium vitality. A few local peculiarities are noted. In Maryland and Virginia the attacks of various foes—army-worm, aphid, and "midgits" (the latter described as a small insect found at the roots)—have proved nearly fatal; spring-sown fields, especially, are almost totally destroyed. Too much rain fell in Wayne and McKean counties, Pennsylvania; the Aphid was in Adams County in large numbers. An unusually large crop was harvested in the sea-coast States, especially in South Carolina and Georgia. In the latter "the best crop for years" is the burden of every report from the State, except that dry weather hurt the spring-sown in Carroll county.

Rust made its appearance in North Carolina, Mississippi, Texas, Kentucky, Iowa and Tennessee. In some counties the injury was severe, thirteen counties in Tennessee reporting an utter failure of late-sown oats. In West Virginia, the "milk weevil" in Berkeley, Grant and Morgan counties, the army-worm in Hampshire and Hardy, and a small green bug in Monongalia, Pocahontas, and Fayette, have committed some depredations. The Ohio prospects are good; fears are felt in Mahoning that the heavy growth may cause them to fall; in Fairfield county the blight is on some fields. This is also the case in Monroe county, Indiana, although elsewhere in that State there are no drawbacks. In Illinois the harvest is about to begin of a crop that encountered no adverse circumstances save the overflow in Henderson county. "Never better," and "could not be better" are repeated phrases. Wisconsin, Minnesota, Iowa, Missouri and Kansas each tell a similar story; danger of overgrowth and lodging is felt in some localities and the work of chinch-bugs seen in LaCade and Gentry counties, Missouri.

BARLEY.—New York alone of the three chief barley-producing States averages 100, Wisconsin standing at 96 and California at 88. The general average in May, indicated by 85, has, by reason of favorable skies, gone to 95. Nebraska is the only State in which the standard is ex-

ceeded, her figures being 109; Iowa and Pennsylvania, 99; Minnesota, 94; Ohio, 76. In the latter State the army-worm destroyed one-third the crop in Greene county, and prevented the cutting of thousands of acres in Warren and Montgomery. In Racine and Walworth counties Wisconsin, it never looked better. From California, San Luis Obispo and Placer counties report an average crop. In Amador and Fresno, cold and dry winds have done serious injury. A rapidly improving condition is marked in Madison county, New York.

Additional Items.

STOUGH BROS. & MIKESSELL, of Ponca, Neb., are putting in a full line of the Stevens rolls.

FREDERICK STARK & SON, of Delevan, Ill., are putting the Stevens rolls into their mill.

B. P. BARNES, of Middleport, N. Y., is putting in a full line of the Stevens roller mills.

DAY BROS. & CO'S mill, at Wampum, Pa., burned July 14. Loss, \$18,000; insurance, \$5,000.

IRONMONGER & TIBBETZ, of Mason City, Ill., have recently ordered a full line of the Stevens roller mills of the Noye Mfg. Co.

MESSRS. S. H. SEAMANS & SON, of Milwaukee, are putting in two pairs of porcelain rolls furnished by E. P. Allis & Co.

F. W. STOCK, Hillsdale Mich., has ordered two pairs of Allis rolls, sharp corrugations, in Gray's Noiseless Frame.

JOHN HOFFER, of Harrisburg, Pa., one of Pennsylvania's most experienced millers, is putting in several Stevens rolls to grind middlings.

MESSRS. DOW, GILLMAN & HANCOCK, Davenport, Iowa, will use Allis rolls exclusively in their new mill, this will include eight pairs of porcelain rolls.

MESSRS. E. P. ALLIS & CO., of Milwaukee, have now facilities for the manufacture of over 7,000 pairs of rolls per year and are working night and day to keep up with their orders.

The new 93-horse power Harris Corliss engine at the Whiting Paper Mill No. 1 at Holyoke, Mass., has been successfully started, and is likely to give good satisfaction.

GEO. E. HARMON, of Menford, N. Y., has decided to change from stones to rollers, and through Mr. Joseph Cowles has placed an order with the Noye Mfg. Co. for a full line of Stevens rolls.

The Spalding mill, at Lockport, N. Y., is being rapidly rebuilt under the personal supervision of Geo. Chester. It will contain twenty-seven pairs of the Stevens rolls, as well as all the recent advanced ideas in milling.

The Edward Harrison Estate, manufacturers of the celebrated Harrison Portable Mills has been finally closed and the business will hereafter be enlarged and continued under the style of The Edward Harrison Mill Co.

The roller mill trade is now very brisk, judging from the Nordyke & Marmon Co's report, who state that they are making rapid progress with the machinery for the following mills: 500-barrel mill at Portland, Oregon; 200-barrel mill at Chattanooga, Tenn.; 200-barrel mill at Fond du Lac, Wis.; 200-barrel mill at Rich Hill, Mo.; 100-barrel mill at Indianapolis, Ind.; 250-

barrel mill at Charleston, Ill.; 75-barrel mill at Warsaw, Ill.; 100-barrel mill at Bozeman, Mon.; 125-barrel mill at Lafayette, Ind., besides large number of orders calling for from one to three 4-roller machines.

The Atlanta, (Georgia) Constitution says more wheat reapers have been purchased in Georgia this year than the entire cotton belt possessed one year ago. This means more grain and less cotton, and is a step in the right direction.

GEORGE BARNES a prominent miller and successful business man, died at Janesville, Wis., July 24, at the age of 64. He lived in Milwaukee from 1842 to 1843, and then went to Janesville, and was an extensive contractor and builder for thirty years. Since 1873 he had been engaged in milling, and operated one of the largest flour mills in Janesville.

A WATER wheel has been invented by Mr. H. S. Holder, of Macon, which, it is claimed, will revolutionize water wheels. It can be placed in a river and will run as well twenty feet under water as only half way out, and can also be run in any size stream.

CAPT. E. W. PRIDE, state agent for the John T. Noye Mfg. Co., has the order for a complete Cosgrove Stevens Roller Mill, from Messrs. May, Webber & Co., of Watertown, Wis.

The Captain has also contracted with the Oconomoc Milling Co., for a full and complete line of Stevens rolls that will be placed in the mills of this firm in time for the coming crop and also has the order of Mr. J. Nelson, Amherst, Wis., for a complete line of Stevens rolls.

THE Atlas Engine Works, of Indianapolis, Ind., are to furnish the steam power for running the machinery at the Louisville Industrial Exposition; also for the National State Fair, to be held at Jackson, Mich. For the Louisville Exposition they furnish one of their new Atlas Corliss engines and for the Michigan State Fair one of their new Semi-Fixed engines and boiler complete.

AMONG the orders on the books of the Atlas Engine Works of Indianapolis, Ind., are the building of an 18x24 engine with three 5x16-4 tubular boilers with complete accessories. A 14x20 engine with boilers and complete outfit for the Ashland Mfg. Co., of Ashland, Wis.; Muddrum Fire Front and complete trimmings for the new shops connected with the Rose Polytechnical Institute, Terre Haute, Ind., also a 75-horse power Locomotive Boiler for the Cincinnati Gas Light and Coke Co., Cincinnati, O.

THE once handsome 4-story brick mill situated on the banks of the River at Pendleton, Ind., was recently visited by the fire fiend. As now viewed from the windows of passing cars on the Bee Line railway nothing is seen but a mass of ashes and dismantled walls. The mill had but recently been altered to manufacture flour on the latest principles. With their characteristic enterprise, the proprietors, Messrs. Potts & Parker, had visited their mill furnishers, Nordyke & Marmon Co., Indianapolis, Ind., before the ruins had ceased smoking, and ordered machinery for a much better and larger mill.

W. SEYKE & Co. of Kewaunee, Wis., have recently placed an order with E. P. Allis & Co. for a 16x42 Reynolds Corliss Engine.

E. P. ALLIS & CO., of Milwaukee, are in receipt of an order from Wilford & Northway, of Minneapolis, for 22 pair of rolls in Gray's Patent Noiseless Frame.

THE following millers have recently placed orders for Gray's Patent Noiseless Roller Mills with E. P. Allis & Co., Milwaukee, Wis.:

F. Tiedeman & Co., St. Louis, Mo.; **C. B. Slater & Co.**, Blanchester, Ohio; **Richard & Butler**, Indianapolis, Ind.; **R. Gent & Co.**, Columbus, Ohio; **John Getty & Co.**, Ellsworth, Kas.; **Sidle, Fletcher, Holmes & Co.**, Minneapolis, Minn.; **B. F. Gump**, Chicago, Ill.; **Jessie Ames & Son**, Northfield, Minn.; **Iglehardt Bros.**, Evansville, Ind.; **Melrose, Milling Co.**, Evansville, Ind.; **Reamer & Williams**, Chetopa, Kas.; **H. W. Merrill**, Richmond, Utah; **J. Q. Halmann & Co.**, St. Louis, Mo.; **G. W. Bird & Co.**, Oswego, Kas.; **Wright Bros. & Co.**, Greenville, Mich.; **Burrough & Pierson**, Flint, Mich.; **The Bradford Mill Co.**, Cincinnati, Ohio; **J. T. Burkett**, Waterloo, Iowa; **W. M. Globe & Bro.**, Dunkirk, Ohio; **Black Bros.**, Beatrice, Neb.; **Richmond City Mill Works**, Richmond, Ind.; **Homer Baldwin**, Youngstown, Ohio; **The Hudnuts**, Pekin, Ill.; **Williams & Orton Mfg. Co.**, Sterling, Ill.; **Williams & Co.**, Libertyville, Mo.; **Henry Meyers**, West Salem, Oregon; **Wood Maude Milling Co.**, St. Louis, Mo.; **E. Middleton & Son**, Greenville, Mich.

ANOTHER RING.—In view of the probable suspension of many of the factories throughout the country, it has been decided by the Glucose and Grape Sugar Association to consolidate the numerous factories. This will limit the supply, reduce the expenses, and admit of better profits from better prices.

A USEFUL SOLDER.—A soft alloy, which will adhere so firmly to metallic, glass, and porcelain surface that it can be used as a solder, and which is invaluable when the articles to be soldered are of such a nature that they cannot bear a high degree of temperature, consists of finely pulverized copper or copper dust, and is obtained by precipitation from sulphate of copper solution by means of metallic zinc. Twenty, thirty or thirty-six parts of this copper dust, according to the hardness desired, are placed in a cast-iron or porcelain-lined mortar, and well mixed with some sulphuric acid having a specific gravity of 1.85. Add to the paste thus formed seventy parts (by weight) of mercury, constantly stirring. When thoroughly mixed the amalgam must be carefully rinsed in warm water to remove the acid, and then laid aside to cool. In ten or twelve hours it will be hard enough to scratch tin. When it is to be used it should be heated to a temperature of 375 degrees C., when it becomes soft as wax by kneading it in an iron mortar. In this ductile state it can be spread upon any surface, to which, as it cools and hardens, it adheres tenaciously.

GLAD TIDINGS OF GREAT JOY!

TO OWNERS WITH DUSTY MILLS AND CLOUDY BROWS.

AN IMPORTANT PROBLEM SOLVED AT LAST!

Taking care of the dust laden air from Middlings Purifiers and other machines, using air to carry off the dust, has been thoroughly met and conquered in the highest degree by the

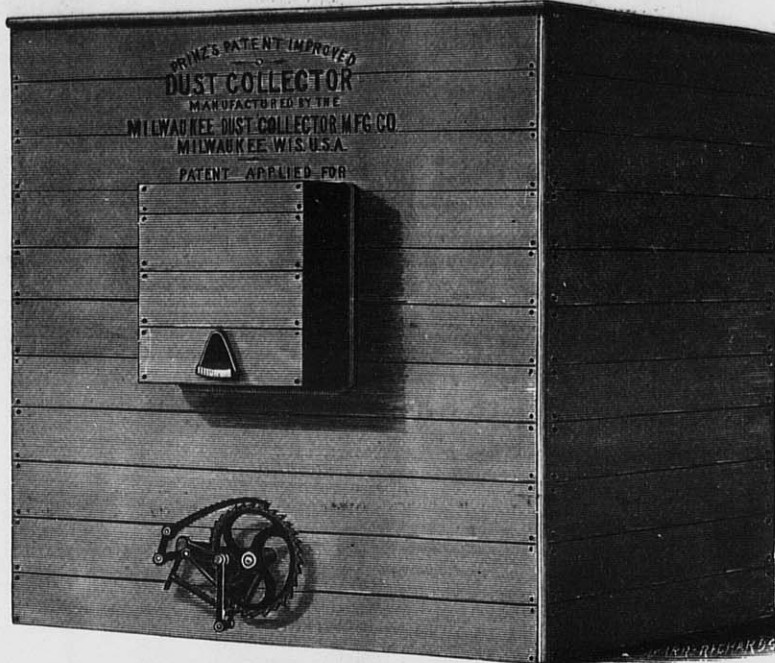
PRINZ DUST COLLECTOR.

After years of study and experiment success has crowned the labor of F. Prinz. He produced a machine, that will give satisfaction in such a manner that no miller would ask for anything better.

Simplicity is a Leading Feature in this Machine.

No Dead Air Chamber.—The dead air chamber, which has been a source of much trouble in other machines by wearing out and allowing the air to get in, thereby injuring the power of the cleaning mechanism on the cloth, which results in the cloth filling up, is entirely overcome in this machine, as it has NO DEAD AIR CHAMBERS.

Less Power is used with this machine than any other as there is no back pressure on the fan; the motion of the fan has to be reduced whenever this machine is applied.



It does away with the cumbersome dusty, dirty old-fashioned dust room, entirely and the numerous spouts leading to them, which fill up the Mill, leaving no room to get around.

It Retains the Dust in the Mill, thus allowing no waste of stock by being blown out into the air as is the case with the old-fashioned dust room.

It does away with the liability of dust explosions as the air coming from the machine is entirely free from dust, which is not the case with the air coming from any other Dust Collector offered to the milling public heretofore.

We the undersigned manufacturers **GUARANTEE ENTIRE SATISFACTION** in the use of this machine. Our machine does not infringe on any patent, which we fully guarantee; on the other hand we caution parties in purchasing infringing machines.

LOW PRICES FOR EXCELLENT MACHINES.

TESTIMONIALS.

WHAT THE SECRETARY OF THE MILLERS' NATIONAL ASSOCIATION SAYS:

MILWAUKEE DUST COLLECTOR MFG. CO.

Milwaukee, July 24th, 1882.

Dear Sirs:—In reply to your inquiry with regard to the working of the "Prinz Dust Collector," put into our mill, would say: We have had it in operation about three weeks, taking the suction from all our millstones and break rolls. During this time it worked to our entire satisfaction without being aided or interfered with in any manner. In short, the machine was not opened until it had been in operation three weeks, when we found that it was entirely free from any accumulation of flour or dust, and apparently as clean as when it made the first revolution. You have evidently struck the correct principle. We have waited long for a successful machine of this kind, and shall want more of them as fast as we can place them in our mill,

Yours truly,

S. H. SEAMANS & CO.

MILWAUKEE DUST COLLECTOR MFG. CO.

Milwaukee, June 18th, 1882.

Gentlemen:—The Dust Collector you have put in on trial in our Mill is giving the same satisfaction as when first started, over two months ago. We have therefore concluded to adopt your machine for all our Purifiers, Roller Exhausts and Cleaning Machinery. You will please make as many Machines for us as are necessary.

Yours truly,

NEW ERA MILLING CO.

More testimonials are given in our circular, for which please address

Milwaukee Dust Collector Mfg. Co.

MILWAUKEE, WIS.

[Please mention the United States Miller when you write to us.]

The Case Mfg. Co., of Columbus, O., are furnishing Messrs. Frank & Bentzin, of New Ulm, Minn., with a lot of machinery.

The Independence Mill Co., of Independence, Ia., have ordered from the Case Mfg. Co., of Columbus, O., some gradual reduction machinery. They intend to break three sizes of graded wheat on the machine.

The last half of the Pillsbury "A" Mill started up July 17 and it is reported that all the machinery moved harmoniously and that the great work gives satisfaction. Manitoba wheat will be used principally for the next few weeks.

D. De War & Co., of Kansas City, Mo., are putting in rolls of the Case Mfg. Co's pattern.

J. B. FICKLIN, of Fredericksburg, Va., is putting in some of the Little Giant break machines, of the Case Mfg. Co., of Columbus, O.

Messrs. DIERCKS & Co., of Marietta, O., are just about starting up on the gradual reduction system of the Case Mfg. Co., of Columbus, O. They will have a complete mill when all is ready.

The first miller to adopt the roller system in Pennsylvania was H. Julius Klinger, of Butler, Pa. A short time ago he put in a Case break machine to go in front of his rolls. He was so well pleased with it that he has just ordered a machine for his second break from the Case Mfg. Co., of Columbus, O.

A. G. MOWBRAY, Superintendent of the Winona Mill Co., of Winona, Minn., has ordered a first break machine of the Case Mfg. Co., for his mill at Stockton, Minn.

I. C. MANSFIELD, of Athens, Tenn., has ordered a first break machine of the Case Mfg. Co., of Columbus, O.

Messrs. VOISENET & Co., of Elkhart, Ind., have ordered a full gradual reduction mill of the Case Mfg. Co. The machinery will all be running inside of two weeks.

NORDYKE & MARMON Co., of Indianapolis, Ind., are manufacturing a flouring mill outfit for French & Nye, of Beloit, Kan.

HINTON & Bro., of Marco, Ind., are remodeling their mill to the new process.

A new three run flouring mill is being built at Bridgeport, W. Va., for Jas. B. Sandusky.

W. A. & C. S. SCHOFIELD, of Indianapolis, Ind., are remodeling their mill to operate on the gradual reduction system. Nordyke & Marmon Co., of the same place, furnish the necessary machinery.

A custom mill outfit is being built at New Maysville, Ind., for Noah Bateman & Bro.

A three-run mill is being built at Oak, Neb., for Jas. Moore & Co.

BOUGHNER & TALLEY, of Gaylord, Kan., are commencing the erection of a three-run new process mill.

A NEW DEPARTURE

We are the Sole and Exclusive Licensees for this Country under the

MORRITZ MARTIN PATENTS

— ONE —

CENTRIFUGAL FLOUR DRESSING REELS

And we are now prepared to fill orders for machines with latest improvements, which include

OUR NEW DOUBLE CONVEYORS, NEW CLOTH FIXING AND STRETCHING DEVICE, NEW AND SIMPLIFIED MANNER OF DRIVING.

THE CENTRIFUGAL has more than **FOUR TIMES** the capacity of the ordinary reel, and will make clear flour and clean finish on stock that cannot be treated in the common reel without loss, no matter how much sil it is passed over. IT IS **SPECIALLY ADAPTED** to handling soft, reground material, full of light impurities, whether from rolls or stone. IT IS **INDISPENSABLE** to a CLOSE FINISH in any system of gradual reduction milling, and will improve the quality of the low grade flour at the same time it makes the offal cleaner. IT **MAKES A CLEAN SEPARATION** on caked and flaky meal from smooth rolls, which no other style of reel can do. IT IS **VASTLY SUPERIOR** to the common reel for dusting middlings. THEY CAN BE USED TO **ADVANTAGE** as a complete system of bolting, to the exclusion of the ordinary reel.

Over one Hundred sold in six weeks.

REFERENCE TO LEADING MILLERS IN THE UNITED STATES.

Write for descriptive circular and price list to

GEO. T. SMITH MIDDINGS PURIFIER CO., - Jackson, Michigan.

[Mention the United States Miller when you write.]

HARVEY & Son's mill, at Marion, Ind., which our readers will remember as being recently destroyed by fire is about to be rebuilt.

NORDYKE & MARMON Co., of Indianapolis, Ind., received a cablegram from South Australia, ordering an outfit of rolls for manufacturing patent roller flour. The capacity of the mill is one thousand barrels of flour per day.

WARD & WYRICK, of Gardner, Kan., have contracted with Nordyke & Marmon Co., of Indianapolis, Ind., for a new process flouring mill outfit which will be operated in connection with the elevator now owned by the first-named firm.

POSTMASTER McKAY, of Cedar Bluffs, Kan., desiring to build up his town, has, together with Mr. Jenkins, commenced the erection of a three-run flouring mill.

L. R. BROWN & Co., formerly of Stevensville, Mich., have found a desirable location at Spring Station, Ind., and will transfer their business to the latter place. The machinery for the new flouring mill is of the Nordyke & Co's make, at Indianapolis Ind.

A 125-barrel gradual reduction mill is being built by Helmer & Cook, of Fond du Lac, Wis. The motive power will be a Cummer automatic engine.

P. O. HENRY's mill, at Vandalia, Ill., is being remodeled to the new process system, using rolls for finishing up.

CHANDLER & Co., Bushnell, Ill., have recently ordered from E. P. Allis & Co., one pair of porcelain and one pair of sharp corrugated rolls in Gray's Noiseless Frame.

MESSRS. ALLIS & Co., have received an order from John Damp, Ashland, O., for two pairs of porcelain rolls in Gray's Noiseless Frame.

BALARD, ISOM & Co., Albany, Oregon, have recently ordered from E. P. Allis & Co., one pair of porcelain and one pair of sharp corrugated rolls in Gray's Noiseless Frame.

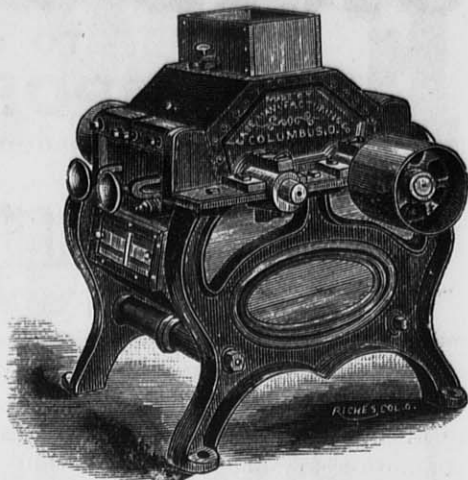
The Little Giant Break Machines.



Single Machine capacity, 5 to 60 bushels per hour.

Are now on the market and winning golden opinions from all quarters. Roller Mills, everywhere, are putting them in front of their Rolls, and New and Old Mills are adopting them for full reductions.

WRITE FOR PARTICULARS AND OUR
Very Low Price List
AS COMPARED TO ROLLS.



Double Machine capacity, 120 bushels per hour.

THE CASE MIDDLINGS PURIFIER,

STANDS TO-DAY WITHOUT A RIVAL, doing More and Better Work than any other, giving double the capacity; each Riddle on No. 3 Machine is 14 feet in length, 90 square feet of cloth, costing less and runs without jar or noise. Warranted equal in capacity to any two Machines made.

A—The Fan spout, is reversible and can be made to blow toward either end of Purifier.

The Fan can be placed on top or end of Purifier—when on end it increases the length 39 inches, and diminishes the height 22 inches.

B—Air-valve upper Riddle.

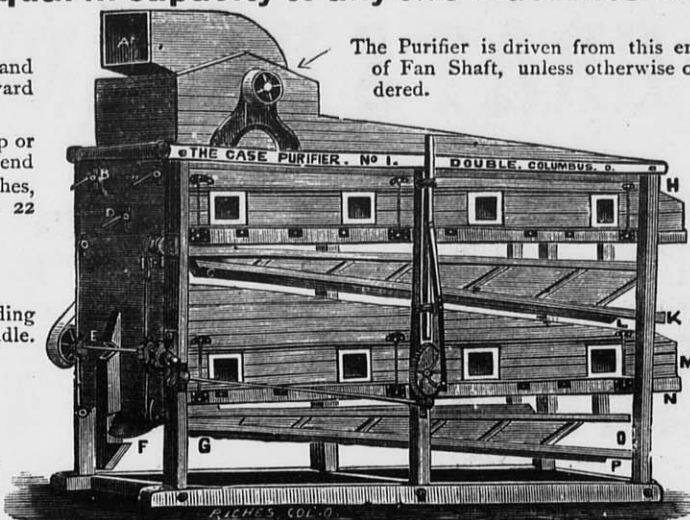
C—Cut-off for upper Riddle, sliding one-half the length of Riddle.

D—Air-valve, lower Riddle.

E—Upper Riddle tails off here.

F—Lower Riddle tails off here.

G—Cut-off for lower Riddle, sliding one-half the length of Riddle.



The Purifier is driven from this end of Fan Shaft, unless otherwise ordered.

H—Feed Box for upper Riddle.

I—Bolting Cloth for upper Riddle.

K—Purified Middlings from upper Riddle.

L—Cut-off from upper Riddle.

M—Feed Box for lower Riddle.

N—Bolting Cloth for lower Riddle.

O—Purified Middlings from lower Riddle.

P—Cut-off from lower Riddle.

The upper and lower halves are each a complete machine, and can be run together, or separately, as desired.

Address

CASE MANUFACTURING COMPANY,
COLUMBUS, OHIO.

OFFICE AND FACTORY, 5th Street, North of Naughten.
[Please mention the United States Miller, when you write to us.]

BOLTING CLOTH



Let it not be forgotten that we keep a very large stock of the genuine Dufour Bolting Cloth always on hand, and those who order that brand from us will always be sure to get the genuine article. In addition to this we keep constantly on hand a large stock of Dutch Anchor Cloth, which we import direct from the manufacturers, in Switzerland, and is not sold by any other dealers in Bolting Cloths in this country. This we warrant to be equal to, and even superior, to any other brand in the market, except Dufour. We know what we say in this regard. Cloths made up ready for the reel in the best manner possible, by the use of our Patent Attachments, using the best of Ticking and Silk Twist. Please write us for prices, discounts, and samples of cloth and making, before purchasing elsewhere.

Address,
HOWES, BABCOCK & EWELL,
Silver Creek, .N Y.

[Please mention the United States Miller, when you write to us.]

STEEL CASTINGS

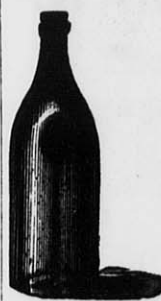
Works, CHESTER, PA.
[Mention this paper when you write us.]

FROM 1-4 to 10,000 LBS. WEIGHT.

True to pattern, sound and solid, of unequalled strength, toughness and durability. An invaluable substitute for forgings or cast iron requiring threefold strength. Gearing of all kinds, Shoes, Dies, Hammer-Heads, Cross-Heads, for Locomotives, etc. 15,000 Crank Shafts and 10,000 Gear Wheels of this steel now running prove its superiority over all other steel castings. CRANK SHAFTS, CROSS-HEADS and GEARING, specialties. Circulars and price list free. Address,

CHESTER STEEL CASTINGS CO.,
407 LIBERTY ST. PHILADELPHIA, U. S. A.

BOTTLED BEER.



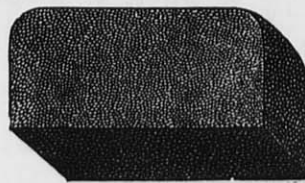
VOECHTING, SHAPE & CO.,
SOLE BOTTLERS OF
JOSEPH SCHLITZ BREWING COMPANY'S
CELEBRATED MILWAUKEE LAGER BEER,
Cor. Second and Galena Streets,
MILWAUKEE, - - - WISCONSIN.
BOTTLERS' SUPPLIES CONSTANTLY ON HAND.



[Parties corresponding will please state where they saw this advertisement.]

John H. Miller,

MANUFACTURER OF
MILLER'S COMPOSITION



MILL BUHR RUBBER,

SECTIONAL FURROW GAUGES AND STAFF.

PETERSBURGH, HUNTINGDON CO., PA.

The Best, Cheapest, and Most Durable Rubber in the Market, USED DRY. Will outwear any Rubber made in the world, and retain its cutting qualities until entirely worn out.
FACE RUBBER, 12x6x3 inches, weight 12 lbs.; price, \$3.00. FURROW RUBBER, 12x6x1 1/4, 1 1/2, 1 3/4 and 2 inches, as required, \$2.50; or both for \$5.00, by Express. Furrow Gauges and Staff \$1.25 per set, by mail. Send for circulars, testimonials &c. Address all orders as above.
N. B.—This Rubber will not wear a pair of Buhrs out of existence in 15 minutes. But if used in connection with the Pick and Red Staff will leave the face and Furrows in the best possible condition for making good work. For cleansing the face of Glazing it has no equal. Try it and be convinced. Money refunded if not satisfactory.
Mention U. S. Miller when you write to me.

Do You Want a Head Miller.

I offer my services to any millowner desiring to employ a miller to take charge of a New PROCESS MILL—Roller Mill preferred. Can furnish the best of references from some of the best Mills in the country, having occupied the position of Head Miller for twelve years.

Address for further correspondence:
X Y Z. Care of UNITED STATES MILLER,
Milwaukee, Wis.

BIRGE & SMITH,

PRACTICAL MILLWRIGHTS.

PLANS, SPECIFICATIONS & ESTIMATES

MADE FOR ALL KINDS OF

MILLWORK, MACHINERY, ETC.

Flour, Sawmill, Tanners' and Brewers' Machinery, and General Mill Furnishers,

Corner of East Water and Knapp Sts.,

MILWAUKEE, - - - WISCONSIN.

[Mention this paper when you write to us.]

Situation Wanted.

A practical Miller of large experience and acquainted with new process milling either roller or stones is desirous of obtaining a situation. Parties desiring a miller either in the city or country will please address

MILLER, No 368 First Avenue,
Milwaukee, Wis.

C. F. MILLER,

MANSFIELD, OHIO.

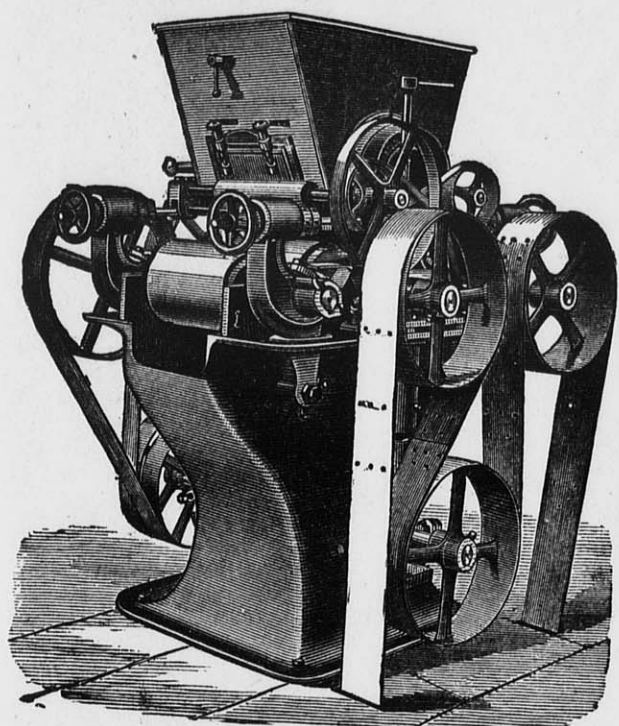
Materials and Plans for Stone or Roller Mills. Roller Mills on the Stevens System a Specialty. The Cosgrove System just the thing for small mills. Plans and Specifications furnished of any desired capacity. Genuine Zurich Silk Bolting Cloths direct from the Manufacturers. Warranted Best Quality.

[Mention U. S. Miller when you write to us.]

EDW. P. ALLIS & CO.

MILWAUKEE, WISCONSIN,

MILL BUILDERS AND FURNISHERS,



AND SOLE MANUFACTURERS OF

GRAY'S PATENT NOISELESS

ROLLER MILLS

CORRUGATED AND SMOOTH CHILLED IRON ROLLS,

WEGMANN'S PATENT PORCELAIN ROLLS.

We shall be Pleased to hear from Millers contemplating an improvement in their Mills, or Building new ones, and can furnish Estimates and Plans of our system of GRADUAL REDUCTION ROLLER MILLING. We have built and Changed over hundreds of Mills, in all parts of the Country, and using all classes of wheat, BOTH HARD AND SOFT, and can furnish References on application. The Largest and Best Mills of this Country are using our System and Roller Machines. Messrs. C. A. Pillsbury & Co., of Minneapolis, have over 400 PAIRS OF OUR ROLLS AND HAVE RECENTLY PLACED AN ORDER WITH US FOR ABOUT ONE HUNDRED AND TWENTY MORE. We have had a longer and larger experience in Roller Mill Building than any other manufacturers of this country. There is no EXPERIMENT ABOUT OUR SYSTEM and rolls, so expensive to millers, and when the mills that we build or change over are ready to start, THEY DO SO AND WITH PERFECT SUCCESS, and there is no further changing, additions, stopping or expense. We manufactured and sold during the year 1881 over TWO THOUSAND FIVE HUNDRED pairs of rolls.

We can send competent men to consult with any millers who contemplate an improvement, and whom they can depend upon as being RELIABLE AND THOROUGHLY COMPETENT to advise them as to the number and kind of machines required, best method of placing them and the change required, if any, in the bolting and purifying system. WE DO NOT URGE A GENERAL CLEANING OUT OF ALL OLD MACHINERY unless we clearly see such would be the ONLY COURSE TO PURSUE to make a SATISFACTORY AND RELIABLE MILL. In nearly all instances we can use all the Old Machinery, leaving it in its original position, or with as slight a change as possible. We aim to make the Improvement so that it will be a Profitable one to the Miller, and at the least expense possible.

Our System is THOROUGH and RELIABLE, and our Roller Machine Perfected by Long Experience, and the Miller Takes no Chances in using them, as HE DOES with the New Fangled Notions of Drive and Adjustment on many other machines now TRYING TO FOLLOW OUR IMPROVEMENTS and still avoid our Patents, in BOTH of which THEY FAIL. We were the first to advocate the Entire Belt Drive, and were opposed by every other maker, who claimed it was not positive, etc., etc., and now that our Belt Drive is an ACKNOWLEDGED SUCCESS, and will SUPERSEDE EVERY OTHER STYLE, these advocates of Gear Drive have suddenly learned that Belts are the Thing. The same may be said of our Spreading Device, Feed Gates, and Adjustable Swing Boxes. Other Makers are now copying these. ALL these Features, including BELT DRIVE with ADJUSTABLE COUNTERSHAFT and TIGHTENER, the SPREADING DEVICE, FEED GATES, Adjustable Swing Boxes and Leveling Devices, Self-Oiling Boxes, etc., are secured to us by several Strong Patents, and we CAUTION MILLERS in regard to these Infringements of Our Patents and Rights, for we shall look to THEM for Redress. The matter is in the hands of our Attorneys, who will soon take VIGOROUS ACTION against the Makers and USERS OF MACHINES infringing Our Patents.

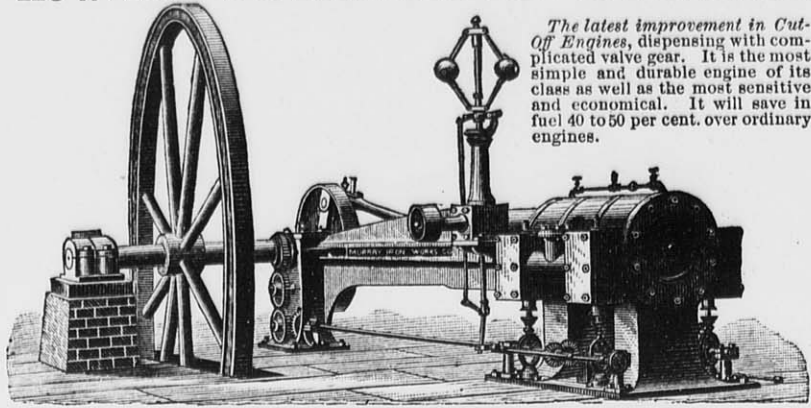
Several machines are already on the market which Broadly Infringe, and we are informed that other makers are now changing their Old Style Machines, and adopting in a large measure Our Improvements. BEWARE OF THEM.

Send for New Illustrated Catalogue, Giving full Information, to

EDW. P. ALLIS & CO.,

MILWAUKEE, WIS.

[Please mention the United States Miller when you write to us.]

"HOWARD" AUTOMATIC CUT-OFF ENGINE.

The latest improvement in Cut-Off Engines, dispensing with complicated valve gear. It is the most simple and durable engine of its class as well as the most sensitive and economical. It will save in fuel 40 to 50 per cent. over ordinary engines.

Built only by the **MURRAY IRON WORKS CO., BURLINGTON, IOWA.**

BUILDERS OF ALL KINDS OF ENGINES AND MACHINERY.

Mention this Paper when you write to us.]

WANTED TO RENT WITH PRIVILEGE OF BUYING, a Water Power Mill in good condition and in a good wheat section. Wisconsin or Minnesota preferred. Address **O. K.**

Care of UNITED STATES MILLER, Milwaukee, Wis.

DON'T BUILD A MILL until you write for Prices and Samples to the **BODINE ROOFING COMPANY,** MANSFIELD, OHIO.

HARRIS-CORLISS ENGINE.

—BUILT BY—

WM. A. HARRIS, Providence, R. I.

Built under their original patents until their expiration. Improvements since added: "STOP MOTION ON REGULATOR," prevents engine from running away; "SELF-PACKING VALVE STEMS" (two patents), dispenses with four stuffing boxes; "RECESSED VALVE SEATS" prevent the wearing of shoulders on seats, and remedying a troublesome defect in other Corliss Engines, "BABBITT & HARRIS' PISTON PACKING" (two patents). "DRIP COLLECTING DEVICES" (one patent). Also in "General Construction" and "Superior Workmanship."

The BEST and MOST WORKMANLIKE form of the Corliss Engine now in the market, substantially built, of the best materials, and in both Condensing and Non-Condensing forms.

The Condensing Engine will save from 25 to 35 per cent. of fuel, or add a like amount to the power and consume no more fuel. Small parts are made in quantities and inter-changeable, and kept in stock, for the convenience of repairs and to be placed on new work ordered at short notice.

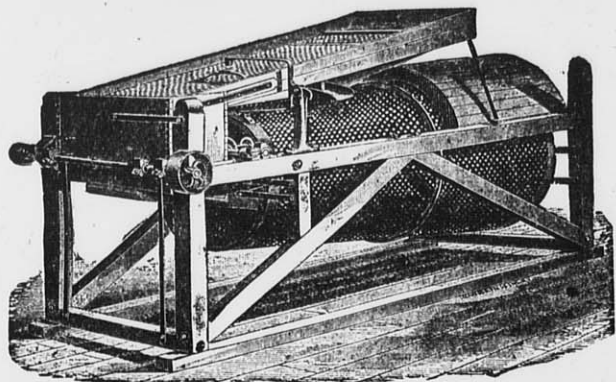
NO OTHER engine builder has authority to state that he can furnish this engine. The ONLY WORKS where this engine can be obtained are at PROVIDENCE, R. I., no outside parties being licensed.

WM. A. HARRIS, Proprietor.

[Mention this paper when you write to us.]

COCKLE SEPARATOR MANUFACTURING COMPANY, MILWAUKEE.

GENERAL MILL FURNISHERS



PLAIN COCKLE MACHINE.

Perforated Zinc at Bottom Figures.

WE GUARANTEE GREAT CAPACITY combined with **GOOD QUALITY OF WORK.** Any common Sieve will separate the cockle from wheat but to separate it **WITHOUT WASTE** is the **GREATEST FEATURE** of our Machine. A **WASTEFUL** machine is a **DAILY LOSS OF MONEY** in a mill. There is **NO MACHINE IN THE MARKET** which can stand comparison with ours.

Carbondale, Ill., Dec. 2, 1881.

Cockle Separator Mfg. Co., Milwaukee.
Gentlemen:—Replying to your late favor, would say that we can cheerfully recommend your Cockle Separator as doing all that you claim for it. We have tested ours thoroughly by this time and know whereof we speak. We would not think of doing without it, having tried it once, and can conscientiously vouch for its good work.

Yours respectfully,

BROWN & WINFREY.

Perrysville, Ind., Nov. 24, 1881.

Cockle Separator Mfg. Co., Milwaukee.
Sirs:—The combined machine I bought of you has been running about three weeks. It certainly does all you claim for it, and is the most perfect Separator that I have any knowledge of.

Yours respectfully,

B. O. CARPENTER.

Hixton, Jackson Co., Wis., Dec. 30, '81

Cockle Separator Mfg. Co., Milwaukee.

Gents:—In answer to your inquiry of the 28th inst., I would say that the combined machine I bought of you last summer, works to my entire satisfaction.

Respectfully yours,

W. T. PRICE,

per **D. G. THOMAS.**

P. S.—I have been milling now for twenty-seven years, but never have I seen anything that will equal yours in cleaning wheat.

As an Oat Separator it is No. 1, and for Cockle it cannot be beat. I can take screenings and separate the cockle from it without wasting any of the small wheat. In my opinion every mill in the United States ought to have one, and if I were to build a mill I would have no other. I remain

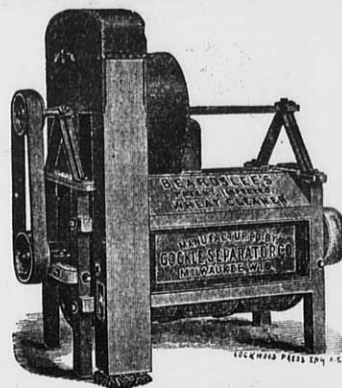
Yours, etc.

D. G. THOMAS.

Also Sole Manufacturer of BEARDSLEE'S PAT. GRAIN CLEANER.

We will contract to furnish entire Wheat Cleaning Machinery for mills, and guarantee the best results.

Send for Illustrated Catalogue.



BEARDSLEE'S WHEAT CLEANER.

Minneapolis, Minn. Aug. 22, 1881.

Cockle Separator Mfg. Co.:

We have been using two of Beardslee's wheat cleaners, a scourer and finisher, for nearly two years, and are passing one hundred and fifty bushels per hour through them, one third more than rated capacity, and are not using any other cleaners, and consider our wheat as well cleaned as any in Minneapolis.

Yours truly,

CAHILL, FLETCHER & CO.

La Crosse, Wis., July 30, 1881.

Cockle Separator Mfg. Co., Milwaukee.

Gentlemen:—The Beardslee Grain Cleaner sent me about the middle of June has been in operation since that

time with very satisfactory results. We cannot see that it breaks the wheat or requires an unusual amount of power to run it.

Yours truly,

WILLIAM LISTMAN.

Milwaukee, Wis., Aug. 23, 1881.

Cockle Separator Mfg. Co.

Gentlemen:—The Beardslee's Grain Cleaners which we have purchased from you for our New Era and Milwaukee Mills give us the best of satisfaction. Experienced millers having seen the work done by the machine agree with us, that it cannot be beat. You are at liberty to use our names as a reference, and to any party calling on us we will be pleased to show the machine in operation.

Yours truly,

NEW ERA MILLING CO.

Pott's Patent Automatic Feeder!

The best device for regulating the FEED ON ROLLER MILLS, PURIFIERS, and other machines requiring a regular feed, spread out the full width. Very cheap and simple. Sent on trial upon application. Write for circulars with illustrations. Perforated Zinc of all sizes at low rates. Send for Illustrated Catalogue.

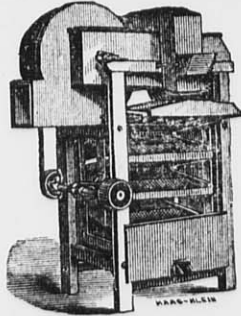
HOWES, BABCOCK & EWELL,

Established 1856.

Silver Creek, Chautauqua County, New York, U. S. A.

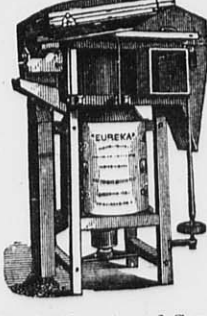
Established 1856.

MANUFACTURERS OF THE WORLD-RENOWNED EUREKA GRAIN CLEANING MACHINERY AND SPECIALTIES HEREWITH ILLUSTRATED



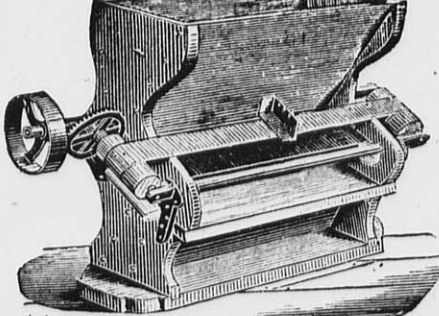
The Eureka Separator

occupies but little space, does its work in an effectual manner. Is also built for use in Elevators and Warehouses, with a capacity of from 100 to 1,000 bushels per hour.



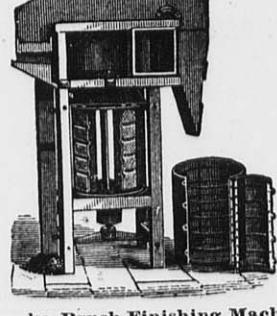
The Eureka Smut and Separating Machine.

A combined Smut and Separating Machine, having thorough ventilation. Over 15,000 of these Machines are now in use.



Eureka Magnetic Automatic Separator.

Removes all metallic particles from a flowing stream of grain, requiring no attention from the miller. 5 sizes.



Eureka Brush Finishing Machine

Recognized as the leading one of this class of machines. Universally recommended for finishing the process of cleaning.



Silver Creek Flour Packer.

Will pack whole and half barrels, and half, quarter, eighth and sixteenth barrel sacks. Provided with labor-saving patent creeling steel coil spring regulating the packing to perfection.

GENUINE DUFOUR AND ANCHOR BRAND BOLTING CLOTHS.

Office and Warehouse in England, 16 MARK LANE, LONDON. E. C.

FULL STOCK ALWAYS ON HAND, MADE UP BY THE AID OF OUR OWN PATENTED ATTACHMENTS, IN A SUPERIOR MANNER.

Gen. Agency for Australian Colonies & New Zealand, **THOS. TYSON, MELBOURNE, VICTORIA.**

Abernethey's New Book.

PRACTICAL HINTS

Mill Building.

The Latest, Best and Only Exclusively Flour Mill Work in Print.

Every Miller, Millwright and Millwright's Apprentice should have a copy.

The UNITED STATES MILLER for one year and a copy of this book will be sent for \$4.00. Address,

UNITED STATES MILLER,

Milwaukee, Wis.

EUREKA MANUFACTURING CO.,

Manufacturers and Sole Proprietors of the

BECKER BRUSH,

—AND—

Galt's Combined Smut and Brush Machine.

The Only Practical Cone-Shaped Machines in the Market, and for that Reason the Best.

ADJUSTABLE WHILE IN MOTION.

Nearly 1,000 of these Machines in Use.

In the United States and foreign countries, and so far as we know all that use them are pleased. Millers, millwrights, and milling experts claim the Cone Shape Solid Cylinder Brush is the true principle to properly clean grain. All machines sent on trial, the users to be the judges of the work. For price and terms apply to

EUREKA MANF'G CO., ROCK FALLS, ILL., U. S. A.

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